THESIS

FOR THE AWARD OF DEGREE OF

DOCTOR OF MEDICINE

SESSION 2020-2023

ATTITUDE OF MEDICAL STUDENTS TOWARDS SUICIDE & IT'S PREVENTION

BY

DR. NITISH VERMA

SANTOSH DEEMED TO BE UNIVERSITY
NO. 1, SANTOSH NAGAR,
GHAZIABAD-201009, NCR DELHI, INDIA

DEPARTMENT OF PSYCHIATRY
SANTOSH MEDICAL COLLEGE & HOSPITAL
GHAZIABAD, NCR DELHI

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Guide

Dr. AMOOLYA KUMAR SETH
M.B.B.S., M.D.(PSYCHIATRY)
Professor & Head
Department of Psychiatry
Santosh Medical College & Hospital
Ghaziabad (U.P.), India

CERTIFICATE BY THE CO-GUIDE

This is to certify that the thesis titled **"Attitude of medical students towards Suicide & its prevention"** is a bona fide genuine research work carried out by **Dr. Nitish Verma** in partial fulfilment of the requirements for award of the degree of M.D. in the speciality of Psychiatry.

Co-Guide

Dr. BRIJESH SARAN
M.B.B.S., M.D.(Psychiatry)
Department of Psychiatry
Santosh Medical College & Hospital
Ghaziabad (UP), India

CERTIFICATE BY THE HEAD OF THE DEPARTMENT

This is to certify that the thesis titled **"Attitude of medical students towards Suicide & its prevention"** is a bona fide research work carried out by **Dr. Nitish Verma** in partial fulfilment of the requirements for award of the degree of M.D. Psychiatry will be based on bona fide work carried out by him /her .

PROF. (Dr.) AMOOLYA KUMAR SETH
M.B.B.S., M.D.(Psychiatry).
Professor & Head
Department of Psychiatry
Santosh Medical College & Hospital
Ghaziabad – 201001 (U.P.)

SANTOSH
Deemed to be University
(Established u/s 3 of the UGC Act, 1956)

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Dr Alka Agrawal

Dean
Faculty of Medical Sciences
Santosh Medical College & Hospital
Santosh Deemed to be University
Ghaziabad – 201001 (U.P.)

MY THESIS

IS DEDICATED TO

MY PARENTS

Dr. S.K. VERMA &

Dr. NIDHI VERMA, &

MY BROTHER

Dr. ANJUL VERMA.

ACKNOWLEDGEMENT

The path toward this thesis has been circuitous. There are many special people whom I would like to thank for their support, who stuck with me not only during this thesis but throughout my Master's degree and for their contribution both directly and indirectly.

Foremost, praises and thanks to God, the Almighty, for his blessings, for the guidance, strength, power of the mind, and good health throughout which helped in making it possible.

Most importantly, I owe and respectfully offer my thanks to my noble parents for their constant moral support and mellifluous affection which helped me to achieve success in every sphere of life, and without their kind devotion, support and encouragement this thesis would have been a sheer dream.

I'm extremely thankful to my brother Dr. Anjul Verma for his constructive discussions and perseverance during the completion of this study.

A profound sense of gratitude binds me to my Guide and path- finder Dr. Amoolya Kumar Seth, Head of the Department of Psychiatry, Santosh Medical College and Hospital, Ghaziabad, who always aimed at moving me forward, inspiring and molding my academic enhancement and for his generous support.

I'm also highly obliged to my Co-Guide of my Thesis Dr. Brijesh Saran, Asst. Professor, Department of Psychiatry, Santosh Medical College and Hospital, Ghaziabad, for his guidance and cooperation during the completion of my study.

No words of thanks can sum up the gratitude and appreciation that I owe to my friend & senior Dr. Maitrayee Patil, for being a consistent source of guidance and encouragement, and for her immense support in helping me at every step and making this thesis happen.

I would like to acknowledge the support, guidance, and empathy of my friends & seniors Dr. Vivek Pathak & Dr. Somesh Ranjan throughout the period.

I'm also thankful for all my juniors and the participants who have extended a great deal of co-operation which a study of this nature requires.

I submit this Thesis of mine with great humility and utmost regard.

(Dr. Nitish Verma)

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INTRODUCTION

INTRODUCTION

Suicide is a serious public health problem and is defined as "any deliberate action which has life-threatening consequences, and the result of the action can be entirely predictable" (World Health Organization 2004)[1]. It is the act of taking one's own life and is a complex human behavior. Suicide is now understood as a multidimensional disorder, which results from a complex interaction of biological, genetic, psychological, sociological, and environmental factors (WHO)[2]. It is a multifaceted health problem influenced by cultural, religious, legal, historical, philosophical, socioeconomic, and traditional factors (IASP 2009)[3]. Every suicide is a tragedy that takes the life of an individual prematurely & affects families, communities, and countries, and has long-lasting effects on the people left behind[4] (WHO).

Suicide occurs throughout the lifespan. According to WHO, it is the fourth leading cause of death among 15–19-year-olds globally[4]. In India, in a report by NCRB[5] (National Crime Report Bureau), the age group of 18-30 years and 30-45 years of age were found to be the most vulnerable groups for resorting to suicide, which creates a higher social, emotional, and economic burden on society.

While the link between suicide and mental disorders (in particular, depression and alcohol use disorders) is well established, many suicides happen impulsively in moments of crisis with a breakdown in the ability to deal with life stresses[4]. According to the NCRB report[5] of 2020, in India, a total of 1,53,052 suicides were reported in the country during 2020 showing an increase of 10.0% in comparison to 2019 and the rate of suicides increased from 10.4% in 2019 to 11.3 in 2020. There were various causes seen in the report, 'Family Problems' and 'Illness' were the major causes of suicides. Other causes included 'Drug Abuse/ Addiction,' 'Marriage Related Issues', 'Love Affairs', 'Bankruptcy or Indebtedness', 'Unemployment', 'Failure in Examination', 'Professional/Career Problems, and 'Poverty'.

Suicide is, therefore, a serious public health priority because every completed suicide is a preventable death if warning signs and symptoms are identified early and managed with timely, evidence-based, and often low-cost interventions.

Research has shown that between 40% and 60% of people who commit suicide had seen a physician in the month before suicide; of these, many more had seen a general health professional rather than a psychiatrist[2], as the general health professional is often placed in

situations where potential suicide risk is ascertained. Hence improved assessment, referral, and management of psychiatric disorders in primary care is an important step in suicide prevention.

Medical professionals, therefore, play an active part in the prevention and care of patients who have attempted suicide and their therapeutic efforts may stop an ongoing suicidal process that is already underway[6]. Contrarily, counter-therapeutic responses might further increase the risk of suicide and lead to additional attempts.

The attitudes of these health professionals toward suicide prevention are likely to have a significant impact on how risk is assessed and handled. For instance, unfavourable attitudes like "suicide prevention is not my responsibility" may make health professionals less likely to evaluate risk or accept suicide management training.

Thus, studies on attitudes toward suicide are of great interest to researchers worldwide. A study by Myers (in 1993) defined 'Attitude' as an evaluation of the entity, expressed in one's affects, behavior, or cognition[7]. Attitude (the way you think & feel about something) refers to a set of emotions, beliefs & behaviors toward a particular object, person, thing, or event and is thus the key to understanding and predicting their behavior[8]. Understanding these attitudes toward suicide may be useful in suicide prevention and in providing intervention for suicidal individuals. Studies have also indicated that changing an individual's attitude toward suicide is an efficient way to prevent death by suicidal attempts (Sakamoto et al. 2006)[9].

Medical professionals' attitudes and knowledge in providing care for people at high risk for suicide are complex, interrelated constructs which could affect their behaviour and have an impact on patient outcomes. Therefore, medical professionals' unfavourable attitudes towards patients experiencing mental health issues might have detrimental outcomes, and delay or prevent help-seeking and recovery[10].

The medical curriculum's limited attention to suicide, stigma, and deficit in suicide management skills leading to a lack of awareness and confidence in the management of suicidal patients are some of the reasons purported to be responsible for the unfavourable beliefs about suicide[11,12].

Medical students are an important source for future medical practices and represent a group of future gatekeepers[13]. In their professional life, they will be confronted with suicidal patients. This is true regardless of their future specialty, as general health professionals see more such cases than mental health professionals[14]. Attitudes of medical professionals toward suicide not

only influence their willingness to treat patients in suicidal crises but also their approach at times of personal crisis as due to job complexity, they are at a high risk of depression and suicide.

Medical students begin developing their attitudes toward suicide and its prevention in their undergraduate years[13]. Thus, focusing on their developing attitudes and educating them about suicide and suicide prevention through proper assessment and treatment of suicidal patients as well as strategies for suicide prevention needs serious concern and organized efforts. A study by Nebhinani et al.[15,16] on final-year medical students found that almost two-thirds of the respondents had poor awareness about suicide, and only half had a favourable attitude toward suicide prevention. Therefore, to provide dignified coordinated treatment, it is crucial to raise awareness of these medical students towards their attitudes concerning suicide and suicide prevention.

AIMS AND OBJECTIVES

AIMS & OBJECTIVES:

AIMS:

THIS STUDY AIMS TO ASSESS THE ATTITUDE OF MEDICAL STUDENTS TOWARD SUICIDE AND ITS PREVENTION.

OBJECTIVES:

THE OBJECTIVES OF THE STUDY ARE TO-

1) DETERMINE THE ATTITUDE OF MEDICAL STUDENTS REGARDING SUICIDE.
2) DETERMINE THE ATTITUDE OF MEDICAL STUDENTS REGARDING SUICIDE PREVENTION.
3) TO FIND THE ASSOCIATION BETWEEN THE ATTITUDE OF MEDICAL STUDENTS REGARDING SUICIDE, SUICIDE PREVENTION, AND SELECTED DEMOGRAPHIC VARIABLES LIKE AGE, GENDER, RELIGION, MARITAL STATUS, LEVEL OF EDUCATION, SOCIO-ECONOMIC STATUS, PERSONAL HISTORY OF PSYCHIATRIC ILLNESS AND SUBSTANCE ABUSE.

REVIEW OF LITERATURE

REVIEW OF LITERATURE:

A study titled "Health professionals' attitudes towards suicide prevention initiatives" was done in Prince of Wales Hospital, Randwick, Australia by Brunero et al.[17] showed that "It is likely that attitudinal benefits will accrue if all health professionals receive some level of suicide prevention education. A key approach in delivering education should be in challenging health professionals' negative attitudes towards suicide."

The study, "Suicide prevention competencies among urban Indian physicians: A needs assessment", conducted by Rahel Eynan et al.[18] in 2015 at Lawson Health Research Institute, London, Ontario, showed that training gaps in suicide prevention exist across the health care professions. 43% of the surveyed physicians felt they were competent to treat suicidal patients. The majority of surveyed physicians believed they would greatly benefit from additional training to enhance their suicide risk assessment and intervention skills.

In India, Naresh Nebhinani et al.[19] at AIIMS Jodhpur studied "Medical students' attitude toward suicide attempters" in 2016. It was seen that only a minority of students had previous exposure of managing any suicidal patient and attended suicide prevention programs. Majority agreed for suicide attempters being lonely and depressed. Nearly half of the students reported a small family, disturbed interpersonal relationship, weak personality, self-punishment approach, cultural inhibitions in emotional expression, national instability, and disbelief in an afterlife, as a major push to attempt suicide. Compared to boys, girls reported a greater contribution of weak personality and self-destructive behaviors and a lesser contribution of family disturbances and religious convictions as suicide triggers. They held a favorable attitude for only one-third of the attitudinal statement, and they were uncertain for two-third of the attitudinal statements. It was concluded that such a high proportion of uncertain responses imply toward lack of awareness and clinical expertise for managing suicide attempters. It also signifies the urgent need for enhancing their educational and clinical exposure, to improve their attitudes toward patients presenting with self-harm.

"Medical students' attitude toward suicide prevention: An exploratory study from North India", a study conducted by Dr. Naresh Nebhinani et al.[20], Department of Psychiatry, AIIMS, Jodhpur in 2017 concluded that 'Merely half of the medical students had a positive attitude toward working with suicidal patients. To make them more equipped, the medical curriculum should

incorporate regular programs on the assessment and management of suicidal patients and a multipronged approach to suicide prevention.

A study by Naresh Nebhinani et al.[21] named "Effectiveness of Brief Educational Training on Medical Students' Attitude toward Suicide Prevention" published online in 2020 showed that brief educational intervention was found effective in improving their attitude toward suicide prevention. The medical curriculum should incorporate regular educational programs, suicide prevention and comprehensive assessment, and management of suicide attempters.'

A study "Impact of psychiatry training on the attitude of medical students toward mental illness and psychiatry " presented by Pranay Gulati et al.[22], in 2021 in Government Medical College and Hospital, Chandigarh, India, to compare the attitude of medical students and interns in a medical college towards mental illness and psychiatry and also to assess the impact of psychiatric training on attitude toward the mentally ill person and mental illness, showed better outlook of interns to psychiatry and patients with mental disorders in comparison to fresh graduate students. A negative attitude toward mental health illness and psychiatry was reflected.

A cross-sectional descriptive survey titled "Influence of Religion on Attitude Towards Suicide: An Indian Perspective" by Vijayalakshmi Poreddi et al.[23] done at NIMHANS Bangalore in 2016 showed that suicidal thoughts and suicidal behaviours were comparatively low among Muslim participants than Hindus. It also revealed more negative attitudes were prevalent among Muslims towards suicide and suicidal behaviour.

Vijayalakshmi Poreddi et al.[24] in a study titled "Gender Differences Related to Attitudes Toward Suicide and Suicidal Behavior", published in 2015 by NIMHANS Bangalore found that men held more pro-preventive attitudes to help persons with suicidal thoughts (80.3 %, $p = 0.05$) and agreed that suicide attempts are impulsive (78.6 %, $p = 0.01$). However, they hold a permissive attitude to help persons with incurable diseases and expressing death wishes to die (66 %, $p = 0.05$).

In a study titled "Attitude Towards Suicide and Help-Seeking Behavior Among Medical Undergraduates in a Malaysian University" conducted by Suzaily Wahab et al.[25] at University Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia found that 'participants who did psychiatry posting indicated a greater tendency to agree on suicide as a way of communication ($p = 0.008$) than those who did not. Participants previously diagnosed with a

psychiatric illness indicated a greater ability to understand and accept suicide ($p < 0.001$) as well as a greater tendency to agree on the normality of suicide ($p = 0.019$) than those without a previous diagnosis. They also found that 'those who attended a suicide prevention program also indicated a greater tendency to agree that loneliness and avoidance could be triggers to suicide ($p = 0.037$) than those who did not.

"Development of a Questionnaire on Attitudes Towards Suicide (ATTS) and Its Application in a Swedish Population", a study done by Ellinor Salander Renberg and Lars Jacobsson[26] in Spring 2003 demonstrated that 'attitudes toward suicide is not just a matter of hostility-sympathy or liberalization-repression, but consist of various domains, especially concerning preventional issues'. Data also showed that the direction of the association between suicide and suicidal behaviors and different attitudes toward suicide varies according to subgroup, type of behaviors, and aggregated or individual levels e.g., in younger women, increase in permissiveness indicated a forthcoming increase in suicide rates.

In a study titled "Attitudes toward suicidal behaviour among professionals at mental health outpatient clinics in Stavropol, Russia and Oslo, Norway" done by Astrid Berge Norheim et al.[27] in 2016, it was seen that professionals reported positive attitudes toward helping suicidal patients, with significant differences in attitudes between cities. A need for further education was reported in both cities, but education was less integrated with mental health care in Stavropol than it was in Oslo. In both cities, it was also seen that psychiatric disorders were considered the major reasons for suicide, and psychotherapy was the most important treatment measure.

A study done in Department of Psychiatry, Soonchunhyang University Bucheon Hospital, Bucheon, Republic of Korea by Yujin ko et al.[28] titled "The Effect of Suicide Prevention Education on Attitudes Toward Suicide in Police Officers" revealed that of the total population, 247 (47.7%) officers (education group) had received suicide prevention education. This education group thought suicide as a predictable matter, disagreeing significantly more with the ATTS factor 'suicide is unpredictable' (3.36 vs. 3.35; p=0.001) compared with the no education group. It was also found that education group more perceived suicide as a cry for help and at the same time disagreed more with the notion 'suicidal thoughts will never disappear' (2.08 vs. 2.26; p=0.025, 3.2 vs. 3.05; p=0.035, respectively).

"Exploring health care professionals' knowledge of, attitudes towards and confidence in caring for people at risk of suicide: a systematic review" done at University of Sydney, Australia by

Evelyn Boukouvalas et al.[29] illustrated the complex relationship between HCP's (health care professionals') knowledge of, attitudes towards and confidence in caring for people at risk of suicide. It found that a range of interrelated factors may influence these constructs, and ultimately come together to shape HCP's care of suicidal patients. It concluded that HCPs receive insufficient suicide education and training through their health curricula. Specialised suicide education and training has been developed and explored and has been shown to improve confidence, knowledge and attitudes. Both personal and professional experiences with suicide also positively impact attitudes and confidence. Religion and culture also play a role in HCP's attitudes towards suicide, as evidenced by varying results based on the religion, culture and ethnicity of HCPs included in this review. Despite improvements in knowledge, confidence and attitudes, there is a lack of evidence to support that this translates to better patient outcomes due to increased Accepted Manuscript screening, early detection or treatment for suicidal thoughts and/or mental illness.

María López et al.[30] in a study titled "Differences in attitude toward prevention of suicide between nursing and medicine students: A study in Mexican population" done in University in south Mexico evaluated attitude toward suicide prevention along with personal and family history of suicide in these students. This study found that medicine students had a better attitude toward suicide prevention than nursing students. Additionally, higher scores were seen in students who had family history of suicide behavior. Therefore, it concluded that besides increasing mental health awareness among students, it is essential to look at their cultural, ethnics and family background when developing strategies to improve suicide prevention attitudes in students of health care areas.

Jane Herron et al.[31] in 2001 at the School of Psychiatry and Behavioural Sciences, University of Manchester, England did a study titled "Attitudes Toward Suicide Prevention in Front-Line Health Staff". This study constructed a questionnaire assessing attitudes toward suicide prevention which was shown to have satisfactory reliability and internal consistency. It concluded that more positive attitudes were associated with being a mental health professional and working in the community. It found that negative attitudes were not necessarily incorrect but if they influence clinical behaviour they may adversely affect the management of some suicidal patients & also underestimation of risk in people with suicidal ideas or recent self-harm.

"Attitudes of Nursing Students towards Suicide Prevention: A Study from Central India" done by Deepak ghormode et al.[32] at Department of Psychiatry CCMM College, Kachandur, Durg, Chhattisgarh assessed the attitude of nursing students toward suicide prevention. The study concludes that nursing students showed favourable attitudes towards suicide prevention being more responsible, less resentful, felt comfortable in assessing and considered their efforts towards these patients as rewarding. Further, the students expressed unfavourable attitudes whether more funds for preventive measures will improve the rates of suicide and also towards modifying predominant risk factors of poverty and unemployment. The study highlights the need of educating the Nursing students regarding suicide prevention through proper training programmes leading to cultivation of more positive attitudes in almost all the students.

A study done in Japan by Haruhiko Midorikawa et al.[33] titled "Mental health of gatekeepers may influence their own attitudes toward suicide: a questionnaire survey from a suicide-prevention gatekeeper training program" in 2019 found that there was a difference in attitude toward suicide between gatekeepers with good and poor mental health. The poor mental health group was more likely to have a permissive view of the right to commit suicide. It also concluded that those who are engaged in suicide prevention need to be aware that their own mental health status could affect their own suicide countermeasure behavior. It might be useful to incorporate this finding when conducting gatekeeper training.

"Knowledge and attitude towards suicide among medical students in Japan: Preliminary study" done by Ryoko Sato et al.[34] in Yokohama, Japan assessed knowledge & attitude concerning suicide in first-, third-, and fifth-year medical students. A significant difference was observed in prevalence of attitudes as categorical variables(Sympathetic/Critical/Unconcerned) between student years ($P = 0.001$). Sympathetic comments increased along with student years, while critical comments decreased. Given the frequent and interventional opportunities of primary-care medical contacts, poor understanding of suicide from the medical viewpoint was of concern. Moreover, judgmental attitudes were common, especially in earlier school years. It was seen that better informed, more understanding physicians and other health professionals could contribute greatly to prevention.

U. Wallin and B. Runeson[35] in 2002 in Sweden did a study titled "Attitudes towards suicide and suicidal patients among medical students". It was concluded that medical students had a strong belief that patients with suicidal problems can be helped, both in the beginning and end of the medical studies. Attitudes became influenced by the knowledge of mental disorders and

by biological aspects of behaviour during the education, with a more medical view on suicidal patients among final year students. Gender differences in attitudes towards suicidal patients were slight in the present study, but female students had to larger extent been seeking own psychiatric help. The survey showed high frequencies of depressive and anxious symptoms among students throughout the time spent in medical school. Depressive feelings did not seem to affect attitudes to suicidal patients. Suicide thoughts were present to the same extent as in similar age groups. However, students with a history of suicide thoughts tended to have a more permissive attitude to suicide.

A study by Tatiana L et al.[36] titled "Attitudes towards clinical services among people who self-harm: systematic review" found that many participants' reactions to and perceptions of their management after an episode of self-harm were negative. Participants associated negative experiences of management with perceived lack of patient involvement in management decisions, inappropriate staff behaviour and lack of staff knowledge, problems with the format of psychological assessments and issues with access to after-care. Positive experiences of care were associated with greater participation in care and care decisions and the perception of staff as sympathetic.

Liranso Gselamua et al.[37] in a study titled "Attitudes towards suicide and risk factors for suicide attempts among university students in South Korea" found that a variety of studies indicated that attitudes ultimately influence suicidal ideation and dictates subsequent action. Societal beliefs, values, and perceptions also play an important role, these should be given due significance in moderating suicide. It was concluded that suicide is such a multifaceted incident that it needs to be approached contextually and from various perspectives. It integrated various dimensions of individual behavior, socio-cultural problem, and a mental disorder that requires broader interventions.

"Attitudes towards suicide following an undergraduate suicide prevention module: experience of medical students in Hong Kong", done by Yousuf S. et al.[38] in 2013 found that changes in attitudes to suicide were observed after the course. There was a reduction in mean scores for negative appraisal, stigmatisation, and fatalism towards suicide. This study further added that a suicide prevention training module seems to have been valued by students and lead to positive attitudes towards understanding suicide.

In 1997, E. Etzersdorfer, L. Vijayakumar et al.[39] studied "Attitudes towards suicide among medical students: comparison between Madras (India) and Vienna (Austria)". This study found

that suicide was mainly seen as a cowardly act in both centres & the negative connotation were much stronger in Madras than in Vienna. In both centres, suicide of the "person most near and dear" and suicide of "someone else" was generally seen as more deliberate than impulsive.

Slobodanka Bašić et al.[40], Faculty of Medicine, University of Niš (Serbia) in 2004 in a study titled "Suicide knowledge and attitudes among medical students of the university of Niš" concluded that the final-year medical students in Niš exhibited considerable knowledge in the area of suicide-related issues, which allowed for their involvement in educational programs for providing better living skills. They said that this could also help them respond better to stressful life situations and to make the right choices. They observed that these programs could respond well to the demand of WHO for the twenty-first century aimed at reducing suicide rates.

"Testing a Model of Suicide Ideation in College Students", a study conducted in 2005 by Lisa C Konick et al.[41] examined several risk factors – Negative Life events(NLE), hopelessness, and depressive symptoms precipitated suicide ideation in college students. The study showed depressive symptoms and hopelessness as predictors of suicide ideation in college students, however, depressive symptoms exerted a stronger influence on suicide ideation than hopelessness and fully mediated the relationship between NLE and hopelessness.

Brandon E. Gibb et al.[42] in 2006 conducted a study on "Suicidal Ideation and Attitude towards Suicide" in New York and observed that there was a link between both hopelessness and depressive symptoms and their levels of suicidal ideation were seen significantly more in males.

The article "Depression, Desperation, And Suicidal Ideation in college students: results from the American Foundation for suicide prevention college screening project" at Emory University in 2008, by Steven J. Garlow et al.[43], examined suicidal ideation and depression in undergraduate college students. It was seen that 11.1% of the students endorsed current suicidal ideation and 16.5% had a lifetime suicide attempt or self-injury episode. It was also seen that students with current suicidal ideation had significantly higher depression symptom severity than those without suicidal ideation.

MATERIAL AND METHODS

MATERIALS & METHODS:

Study Design: A cross-sectional study will be conducted in a tertiary care medical institute of Santosh medical college & hospitals.

Place of study: Santosh Medical College & Hospitals, Ghaziabad.

Study Group: Undergraduate & postgraduate students

Study Period: 2 years

Sample Size: 258 (188-minimum)

Data analysis: The data will be collected & entered in MS excel 2010. The analysis will be done with the appropriate statistical method using R software version 4.0.2.

Sample Size: prevalence of Suicide is between 50%

$$n = \frac{Z^2_{1-\alpha/2}\, P(1-p)}{l^2}$$

n = sample size

z α = 1.96 at 5% level of significance

p= prevalence 50%[25]

l = relative error i.e., 15% of 50%

attrition factor=10%

Sample size(n) = 188

Inclusion criteria:

Undergraduate and postgraduate medical students in Santosh Medical college

Those who have given written informed consent.

Exclusion criteria:

Those who did not give informed consent.

Methodology

Ethical clearance will be obtained from the Institute's Ethical Committee. Permission will be obtained from the Institution. All the participants will be provided with written and informed consent proforma to be signed by them. Those participants who will be giving their consent will be included in the study. Participants will be given instructions for filling the semi-structured proforma and other psychiatric rating scales.

Following psychiatric rating scales will be used for the collection of data: -

Semi-Structured Proforma for Socio-Demographic Data

Attitudes towards Suicide questionnaire(ATTS)

Attitude towards suicide prevention scale(ATSP)

The Zung Rating Depression Scale

The Self Rating Anxiety Scale of Zung

Semi-Structured Proforma:

A semi-structured proforma will be made to collect socio-demographic details like name, age, gender, year of education, residential background, family and personal history of psychiatric illnesses, etc.

Attitudes towards Suicide questionnaire (ATTS)

The Attitudes towards Suicide questionnaire (ATTS) was used to measure participants attitudes towards suicide and suicidal behavior (Renberg and Jacobsson 2003)[26]. The ATTS includes 37 statements about suicidal behaviour with a five-point Likert answering scale from 1 = strongly disagree to 5 = strongly agree. The higher scores therefore represent greater agreement with the items (reversed scoring on item 7 and 9)[1]. A higher score implies a negative attitude.

The reliability coefficients vary from .38 to .86 for the scale (Renberg and Jacobsson 2003)[3]. Psychometric properties of the original ATTS questionnaire have been well documented (Renberg and Jacobsson 2003; Salander Renberg et al. 2008)[26]. The ATTS is also appropriate

for a wide range of population; it is not limited for use among certain age groups, people with specific cultural backgrounds or those working in certain professional disciplines (Kodaka et al. 2010)[7]

Attitude toward suicide prevention Scale:

Attitude toward suicide prevention scale is a 14-item, self-rated, 5-points Likert scale. It has good internal consistency (Cronbach's alpha = 0.77) and high test-retest reliability[31]. It has been used in several studies.

The 'Attitudes to Suicide Prevention (ATSP) Scale' (Herron et al. 2001)[31] has been used to assess the success of staff training in primary care services, emergency departments, and mental health services. Two Items (items 4 and 14) are reverse scored to maintain one-dimensionality of scale and one item (Item 14) is anchored at None, Few, Many, Most, All[44]. An overall score was calculated by adding the scores from each item (higher scores indicated more negative attitudes)[31].

Statement:

1 = strongly disagree 2 = disagree 3 = uncertain 4 = agree 5 = strongly agree

The Zung Self Rating Depression Scale[45]

The Zung Self-Rating Depression Scale is a 20-item self-report questionnaire that is widely used as a screening tool, covering affective, psychological and somatic symptoms associated with depression. The questionnaire takes about 10 minutes to complete, and items are framed in terms of positive and negative statements. It can be effectively used in a variety of settings, including primary care, psychiatric, drug trials and various research situations. Each item is scored on a Likert scale ranging from 1 to 4. A total score is derived by summing the individual item scores, and ranges from 20 to 80. Most people with depression score between 50 and 69, while a score of 70 and above indicates severe depression. The scores provide indicative ranges for depression severity that can be useful for clinical and research purposes.

The Zung Self Rating Anxiety Scale[46]

The Zung Self Rating Scale for anxiety is widely used in the psychiatric field. The rating scale is scored from 1 to 4 points. Most answers go in order of 1 (a little of the time) to 4 (most of the time). However, questions 5, 9, 13, 17, and 19 are scored in the opposite order, since they

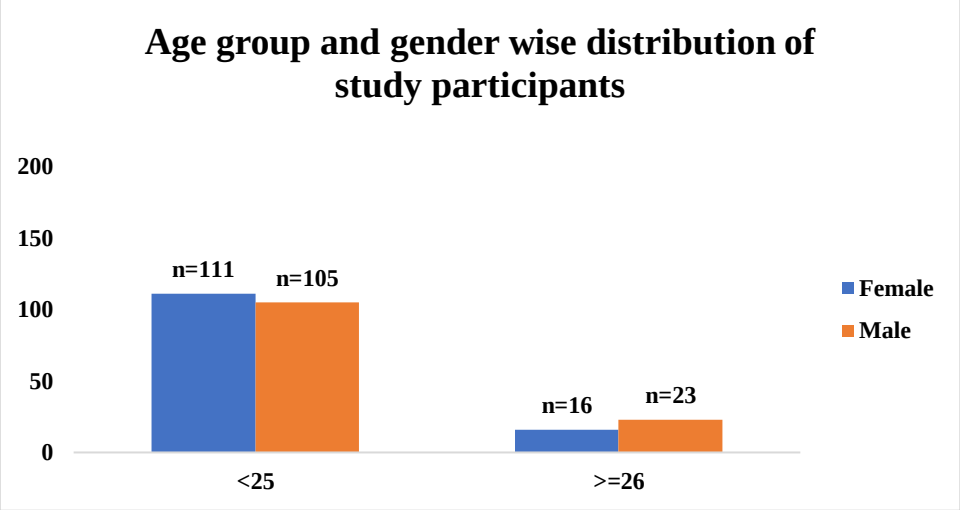
represent positive/non-anxiety statements. Scores are then calculated and individuals are given the results as 20-44 Normal Range 45-59 Mild to Moderate Anxiety Levels 60-74 Marked to Severe Anxiety Levels 75-80 Extreme Anxiety Levels. It takes less than 5 minutes to complete.

OBSERVATIONS AND RESULTS

OBSERVATION AND RESULTS:

Table 1: Age group and gender-wise distribution of study participants

Age	Female		Male		Total	
	n	%	n	%	n	%
<=25	111	84.38%	105	77.39%	216	80.83%
>=26	16	15.62%	23	22.61%	39	19.17%
Grand Total	127	100.00%	128	100.00%	255	100.00%
Mean ± Sd.	22±2.7		22.6±3.7		22.3±3.3	



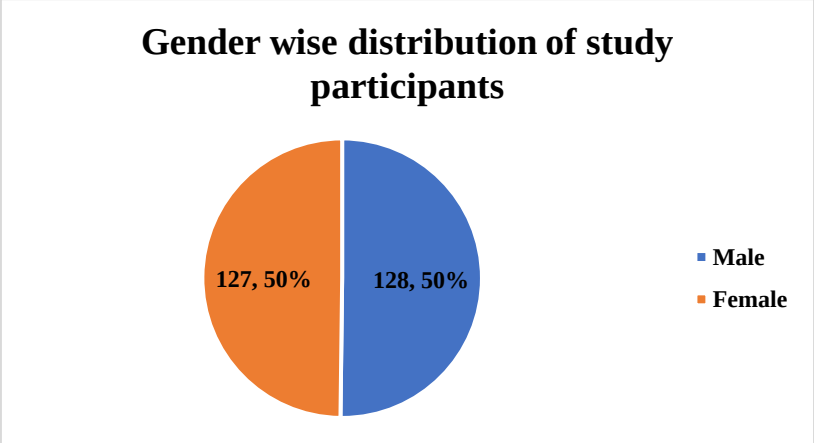


Table 2: Distribution of study participants according to Religion

Religion	Frequency(n)	Percentage(%)
Christian	2	0.78%
Hindu	228	89.41%
Muslim	19	7.45%
Other	3	1.18%
Sikh	3	1.18%
Grand Total	255	100.00%

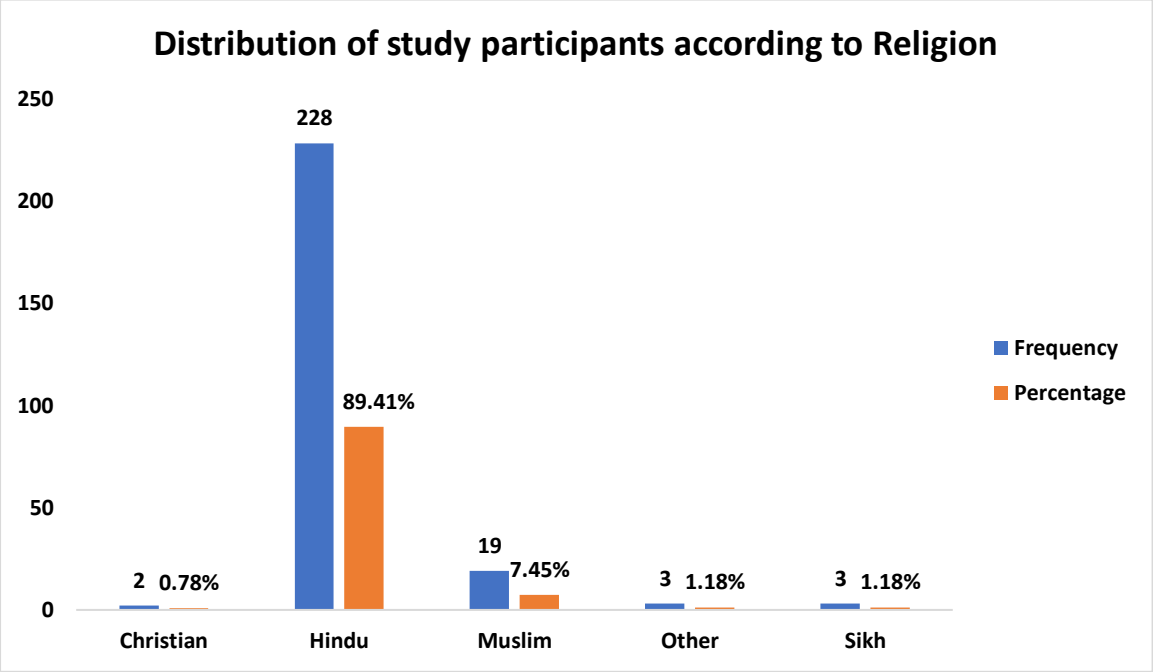


Table 3: Marital status-wise distribution of study participants

Marital Status	Frequency(n)	Percentage(%)
Married	7	2.75%
Unmarried	248	97.25%
Grand Total	255	100.00%

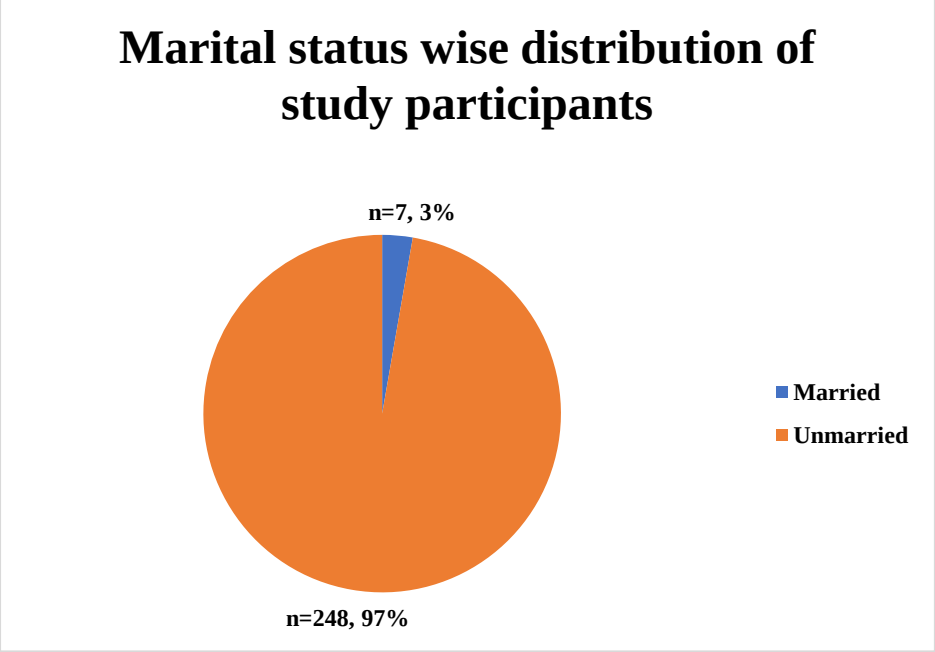


Table 4: Distribution of study subjects according to level of education

Education	Frequency(n)	Percentage(%)
1st Year MBBS	71	27.84%
2nd Year MBBS	39	15.29%
3rd Year MBBS	36	14.12%
4th Year MBBS	34	13.33%
Intern	52	20.39%
Post graduate	23	9.02%
Grand Total	255	100.00%

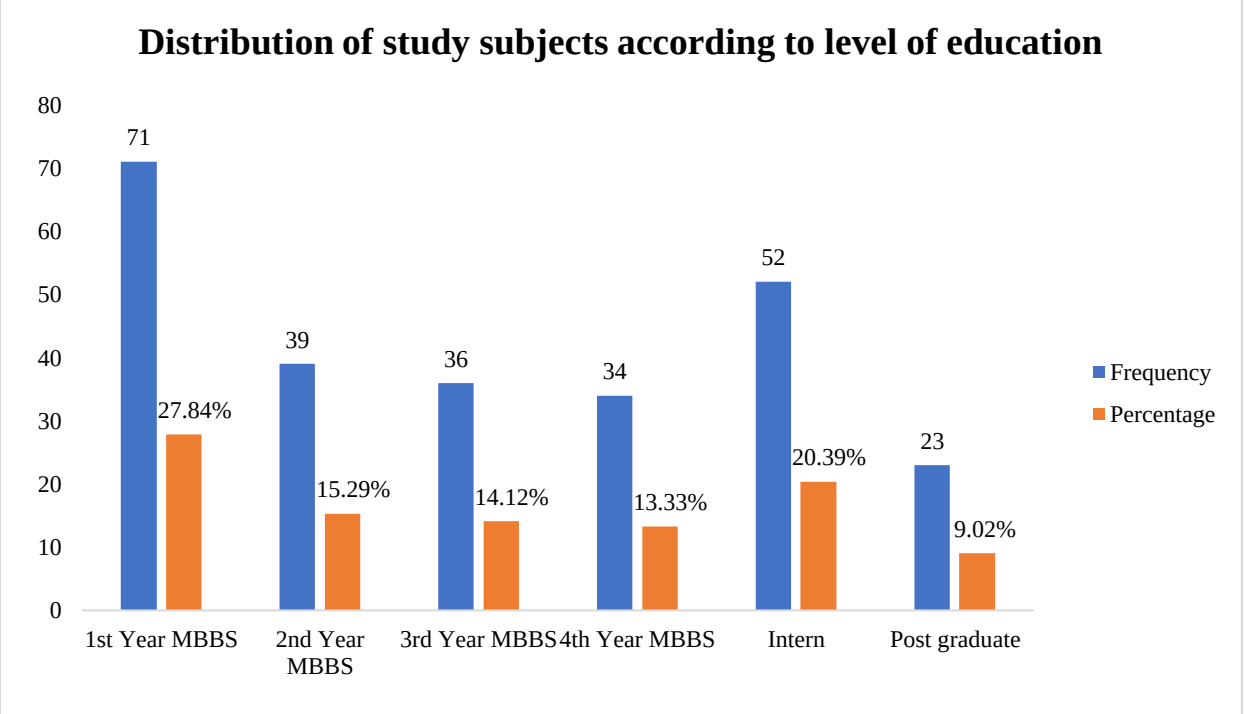


Table 5:Distribution of study subjects according to socio-economic status

SES	Frequency(n)	Percentage(%)
Upper	138	54.12%
Middle	112	43.92%
Lower	5	1.96%
Grand Total	255	100.00%

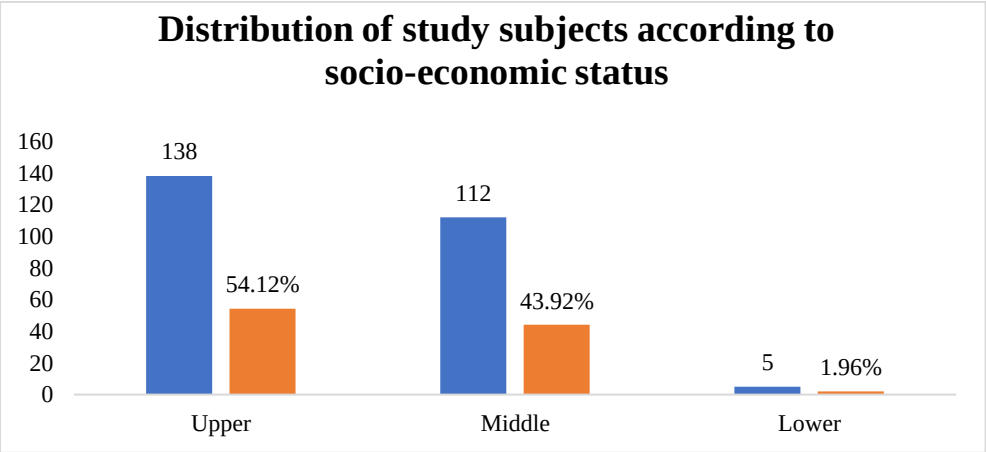


Table 6: Distribution of study subjects according to type of family

Type of Family	Frequency(n)	Percentage(%)
Extended	14	5.49%
Joint	58	22.75%
Nuclear	183	71.76%
Grand Total	255	100.00%

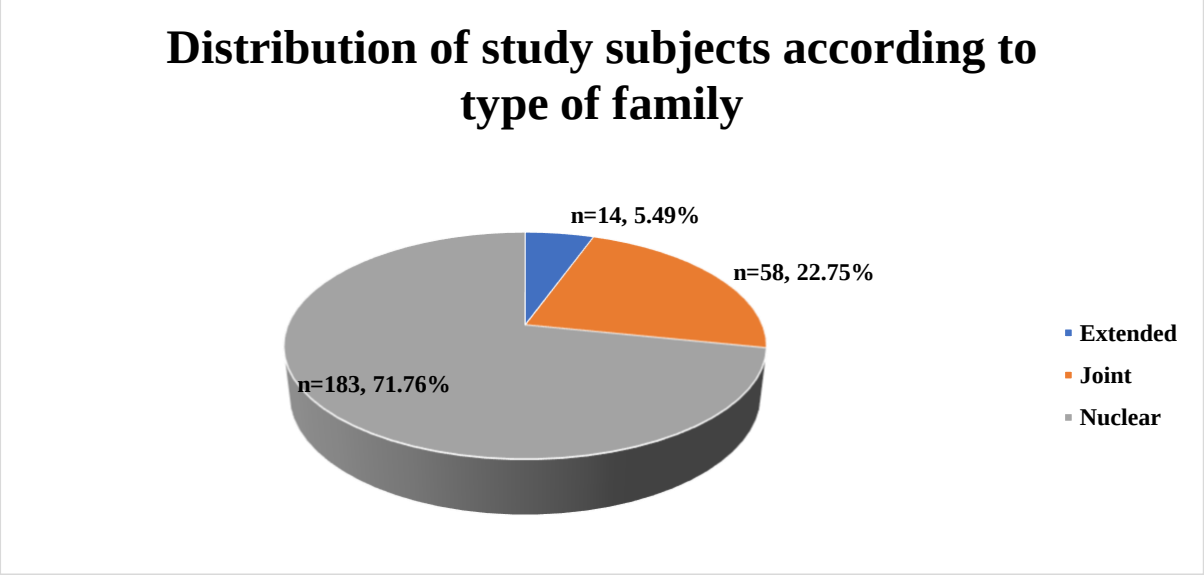


Table 7: Distribution of study subjects according to place of residence

Place of Residence	Frequency(n)	Percentage(%)
Rural	28	10.98%
Urban	227	89.02%
Grand Total	255	100.00%

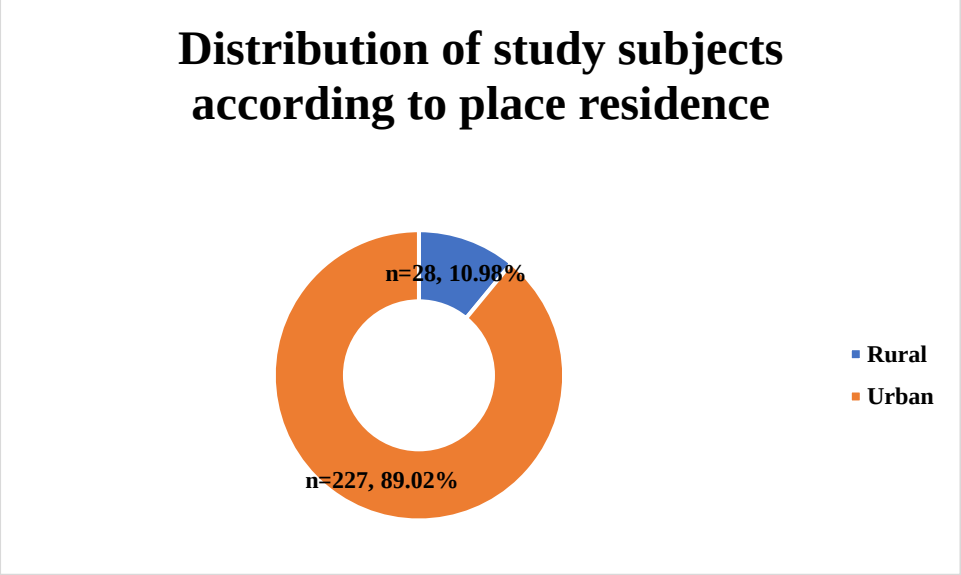


Table 8: Distribution of study subjects according to family history of psychiatric illness

History of psychiatric illness	Frequency(n)	Percentage(%)
No	241	94.51%
Yes	14	5.49%
Grand Total	255	100.00%

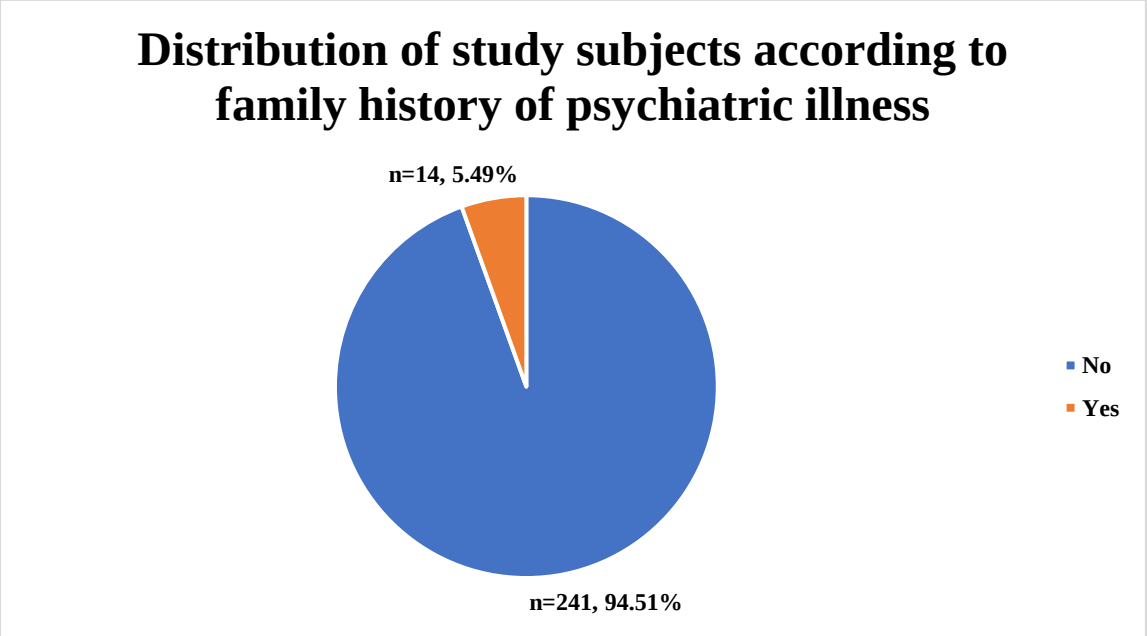


Table 9: Distribution of study subjects according to personal history of psychiatric illness

Personal history of psychiatric illness	Frequency(n)	Percentage(%)
No	232	90.98%
Yes	23	9.02%
Grand Total	255	100.00%

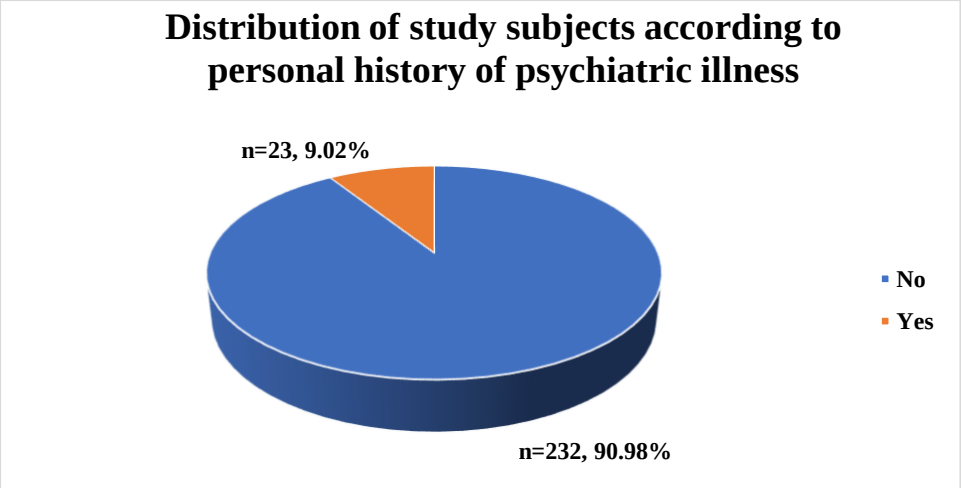


Table 10: Distribution of study subjects according to personal history of Suicidal Ideation/ Intent/ attempt

Any personal history of Suicidal Ideation/ Intent/ attempt	Frequency(n)	Percentage(%)
No	235	92.16%
Yes	20	7.84%
Grand Total	255	100.00%

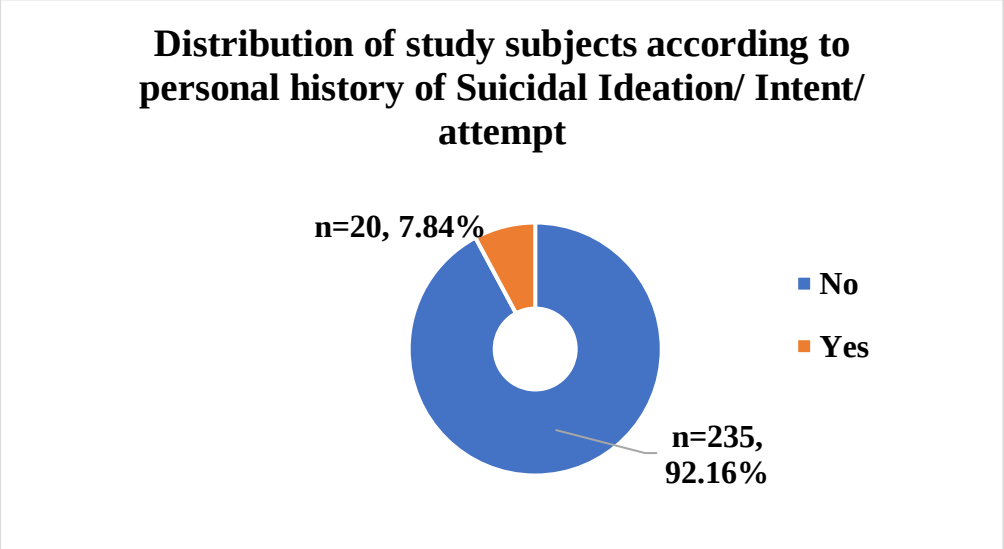


Table 11:Distribution of study subjects according to Any other substance abuse (e.g., alcohol/ tobacco/ ganja/ hash/ bhang/ heroin /opium).

Any substance abuse	Frequency(n)	Percentage(%)
No	236	92.55%
Yes	19	7.45%
Grand Total	255	100.00%

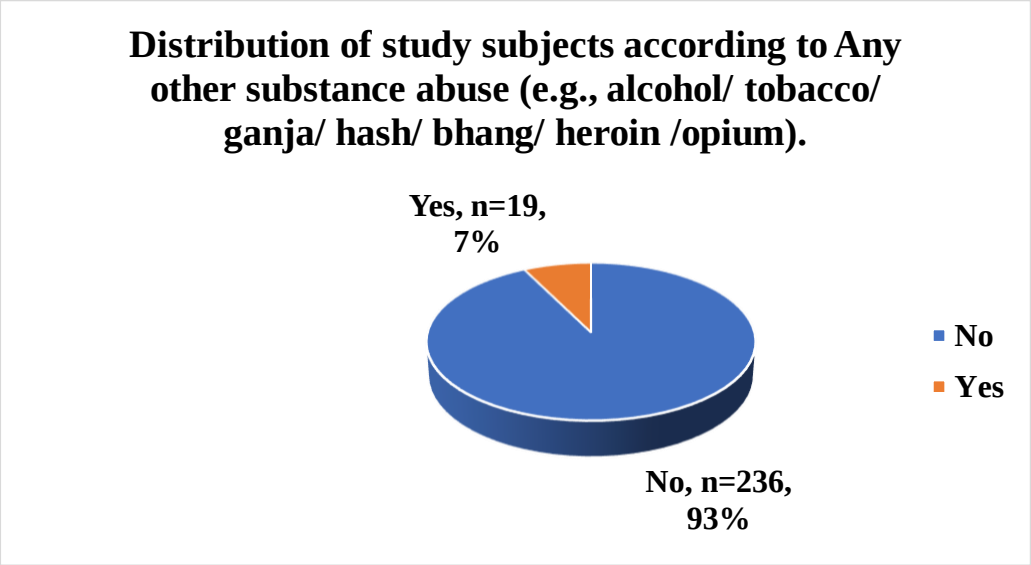

Distribution of study subjects according to Any other substance abuse (e.g., alcohol/ tobacco/ ganja/ hash/ bhang/ heroin /opium).
Yes, n=19, 7%
No, n=236, 93%
No
Yes

Table 12:Distribution of study subjects according to Any experience of contact with persons at high risk for suicide or self-harm

Any experience of contact with persons at high risk for suicide or self-harm?	Frequency(n)	Percentage(%)
No	172	67.45%
Yes	83	32.55%
Grand Total	255	100.00%

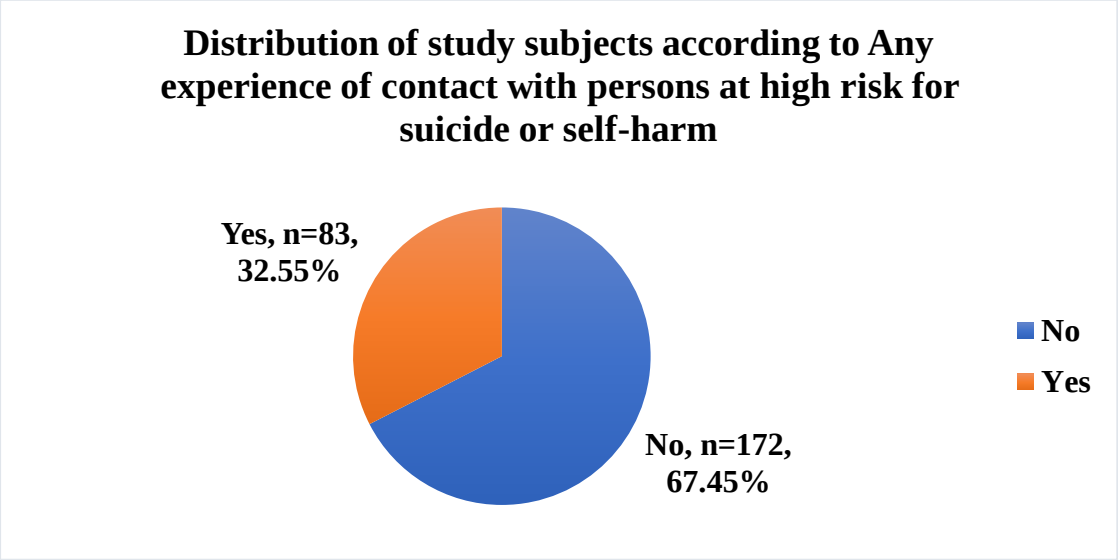

Distribution of study subjects according to Any experience of contact with persons at high risk for suicide or self-harm
Yes, n=83, 32.55%
No, n=172, 67.45%
No
Yes

Table 13: Distribution of study subjects according to ZUNG depression status

ZUNG Depression Status	Frequency(n)	Percentage(%)
Normal	126	49.41%
Mild Depression	115	45.10%
Moderately Depressed	11	4.31%
Severely Depressed	3	1.18%
Grand Total	255	100.00%

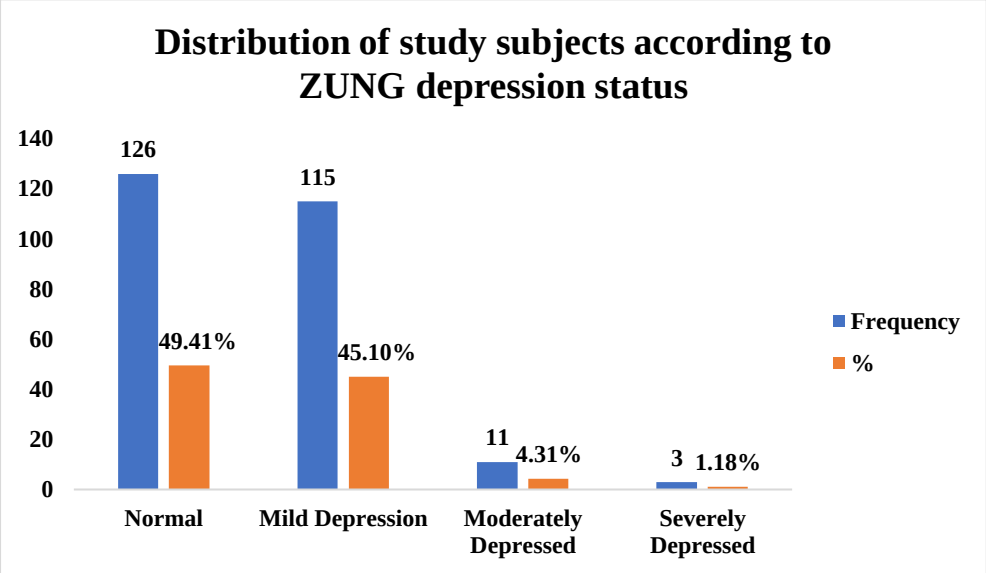


Table 14: Distribution of study subjects according to ZUNG Anxiety status

ZUNG Anxiety status	Frequency(n)	Percentage(%)
Normal	98	38.43%
Minimal to Moderate Anxiety	103	40.39%
Marked to Severe Anxiety	40	15.69%
Most extreme Anxiety	14	5.49%
Grand Total	255	100.00%

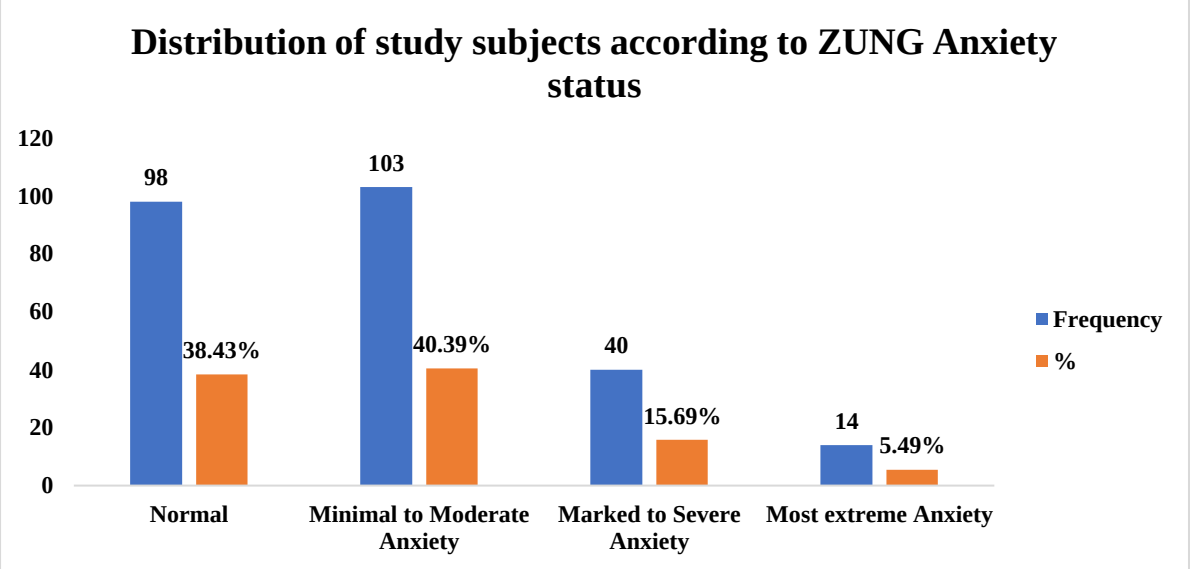


Table 15: ATTS Scale

No.	Response	Strongly disagree (n,%)	Disagree (n,%)	Uncertain (n,%)	Strongly agree (n,%)	Agree (n,%)
1	It is always possible to help a person having suicidal thought	13, (5.1%)	28, (11%)	22, (8.6%)	74, (29%)	118, (46.3%)
2	Suicide can never be justified	19, (7.5%)	44, (17.3%)	62, (24.3%)	47, (18.4%)	83, (32.5%)
3	Committing suicide is among the worst thing to do to ones relatives	11, (4.3%)	20, (7.8%)	31, (12.2%)	97 , (38%)	96, (37.6%)
4	Most suicide attempts are impulsive actions	14, (5.5%)	42, (16.5%)	45, (17.6%)	44, (17.3%)	110, (43.1%)
5	Suicide is an acceptable means to terminate an incurable disease	76, (29.8%)	74, (29%)	49, (19.2%)	19, (7.5%)	37, (14.5%)
6	Once a person has made up his/her mind about committing suicide no one can stop him/her	74, (29%)	117, (45.9%)	32, (12.5%)	10, (3.9%)	22, (8.6%)
7	Many suicide attempts are made because of revenge	33, (12.9%)	74, (29%)	71, (27.8%)	13, (5.1%)	64, (25.1%)

	or to punish someone else					
8	People who commit suicide are usually mentally ill	25, (9.8%)	61, (23.9%)	55, (21.6%)	24, (9.4%)	90, (35.3%)
9	It is a human duty to try to stop someone from committing suicide	7, (2.7%)	9, (3.5%)	17, (6.7%)	115, (45.1%)	107, (42%)
10	When a person commits suicide, it is something that he/she has considered for a long time	5, (2%)	32 , (12.5%)	72, (28.2%)	31, (12.2%)	115, (45.1%)
11	There is a risk of evoking suicidal thoughts in a person's mind if you ask about it	20, (7.8%)	57, (22.4%)	69, (27.1%)	12, (4.7%)	97, (38%)
12	People who make suicidal threats seldom complete suicide	8, (3.1%)	60, (23.5%)	116, (45.5%)	10, (3.9%)	61, (23.9%)
13	Suicide is a subject that one should rather not talk about	80, (31.4%)	90 , (35.3%)	29, (11.4%)	16, (6.3%)	40, (15.7%)
14	Loneliness could for me be a reason to take my life	52, (20.4%)	62 , (24.3%)	52, (20.4%)	19, (7.5%)	70, (27.5%)

15	Almost everyone has at one time or another thought about suicide	25, (9.8%)	41 , (16.1%)	66, (25.9%)	23, (9%)	100, (39.2%)
16	There may be situations where the only reasonable resolution is suicide	59, (23.1%)	86 , (33.7%)	55, (21.6%)	12, (4.7%)	43, (16.9%)
17	I could say that I would take my life without actually meaning to do so	57, (22.4%)	73 , (28.6%)	53, (20.8%)	11, (4.3%)	61, (23.9%)
18	Suicide can sometimes be a relief for those involved	48, (18.8%)	75 , (29.4%)	59, (23.1%)	12, (4.7%)	61, (23.9%)
19	Suicides among young people are particularly puzzling since they have everything to live for	18, (7.1%)	41 , (16.1%)	88, (34.5%)	22, (8.6%)	86, (33.7%)
20	I would consider the possibility of taking my life if I were to suffer from a severe, incurable, disease	64, (25.1%)	82 , (32.2%)	51, (20%)	15, (5.9%)	43, (16.9%)
21	A person once they have suicidal	30, (11.8%)	121 , (47.5%)	55, (21.6%)	11, (4.3%)	38, (14.9%)

	thoughts will never let them go					
22	Suicide happens without warning	22, (8.6%)	84 , (32.9%)	61, (23.9%)	19, (7.5%)	69, (27.1%)
23	Most people avoid talking about suicide	6, (2.4%)	16, (6.3%)	45, (17.6%)	38, (14.9%)	150, (58.8%)
24	If someone wants to commit suicide, it is his or her business and we should not interfere	109, (42.7%)	84 , (32.9%)	36, (14.1%)	6, (2.4%)	20, (7.8%)
25	It is mainly loneliness that drives people to suicide	18, (7.1%)	53 , (20.8%)	65, (25.5%)	20, (7.8%)	99, (38.8%)
26	A suicide attempt is essentially a cry for help	10, (3.9%)	27 , (10.6%)	53, (20.8%)	57, (22.4%)	108, (42.4%)
27	On the whole, I do not understand how people can take their lives	14, (5.5%)	45 , (17.6%)	62, (24.3%)	32, (12.5%)	102, (40%)
28	Usually relatives have no idea about what is going on when a person is thinking of suicide	7, (2.7%)	23, (9%)	45, (17.6%)	39, (15.3%)	141, (55.3%)
29	A person suffering from a severe, incurable, disease expressing wishes to	35, (13.7%)	55 , (21.6%)	85, (33.3%)	24, (9.4%)	56, (22%)

	die should get help to do so					
30	I am prepared to help a person in a suicidal crisis by making contact	9, (3.5%)	15 , (5.9%)	51, (20%)	61, (23.9%)	119, (46.7%)
31	Anybody can commit suicide	24, (9.4%)	35, (13.7%)	45, (17.6%)	36, (14.1%)	115, (45.1%)
32	I can understand that people suffering from a severe, incurable, disease commit suicide	19, (7.5%)	67, (26.3%)	74, (29%)	15, (5.9%)	80, (31.4%)
33	People who talk about suicide do not commit suicide	18, (7.1%)	76, (29.8%)	114, (44.7%)	10, (3.9%)	37, (14.5%)
34	People do have the right to take their own lives	53, (20.8%)	65, (25.5%)	68, (26.7%)	16, (6.3%)	53, (20.8%)
35	Most suicide attempts are caused by conflicts with a close person	8, (3.1%)	33, (12.9%)	86, (33.7%)	18, (7.1%)	110, (43.1%)
36	I would like to get help to commit suicide if I were to suffer from a severe, incurable disease	51, (20%)	77, (30.2%)	73, (28.6%)	20, (7.8%)	34, (13.3%)

37	Suicide can be prevented	6, (2.4%)	12, (4.7%)	28, (11%)	122, (47.8%)	87, (34.1%)

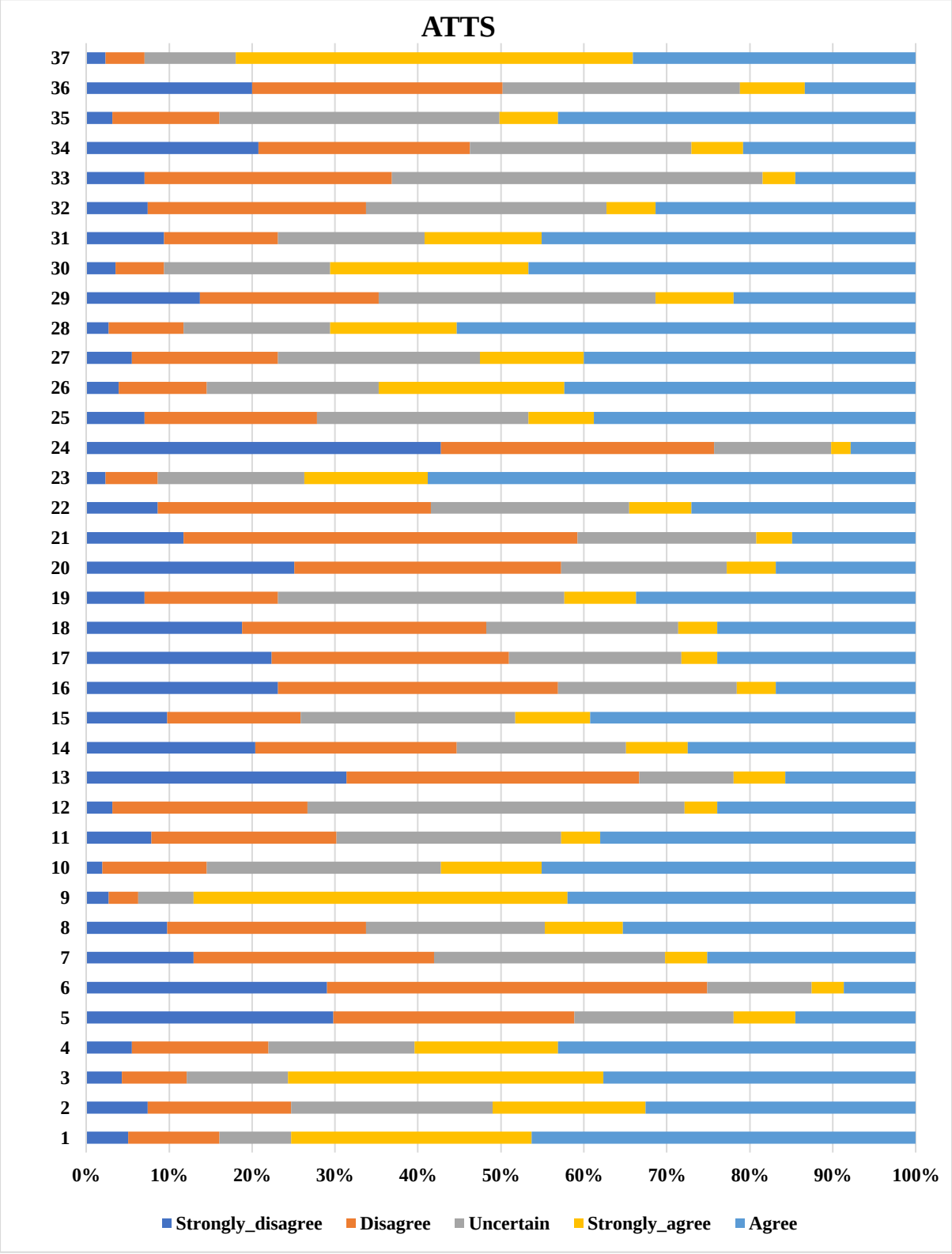


Table 16:Mean ATTS Score according to age group

	Age group	Mean	Std. Deviation	t value	p-value
ATTS	<25	115.43	15.131	2.048	<0.05*
	>=25	109.85	18.436		

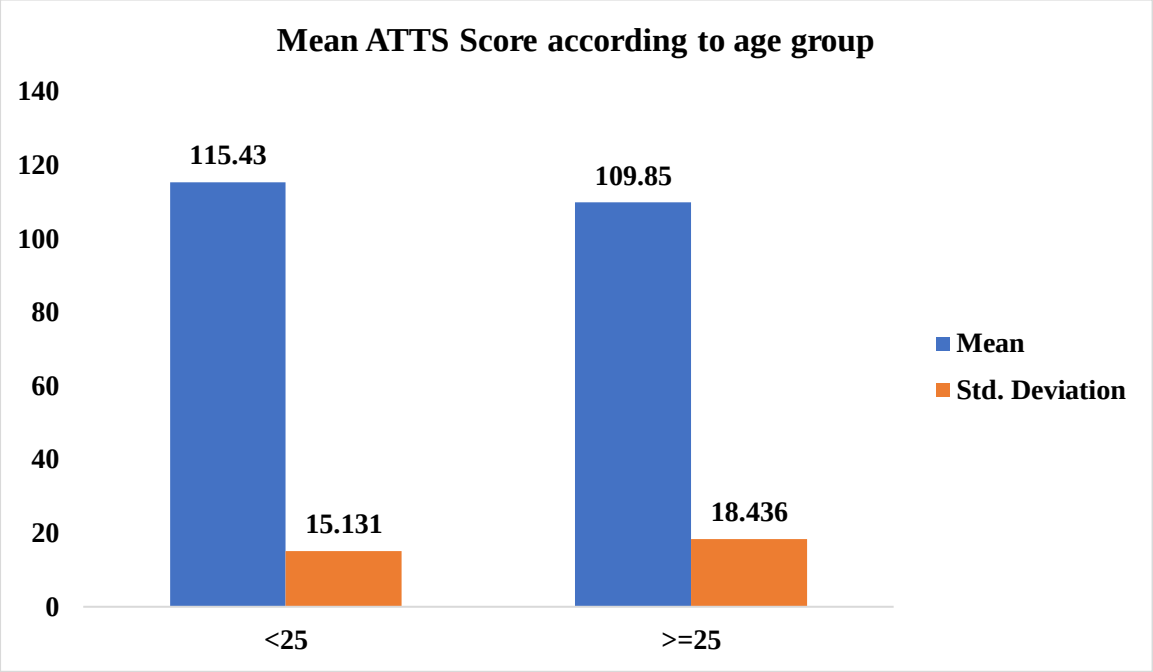


Table 17: Mean ATTS Score according to gender

	Gender	Mean	Std. Deviation	t value	p-value
ATTS	Male	115.5	17.839	0.939	>0.05
	Female	113.65	13.374		

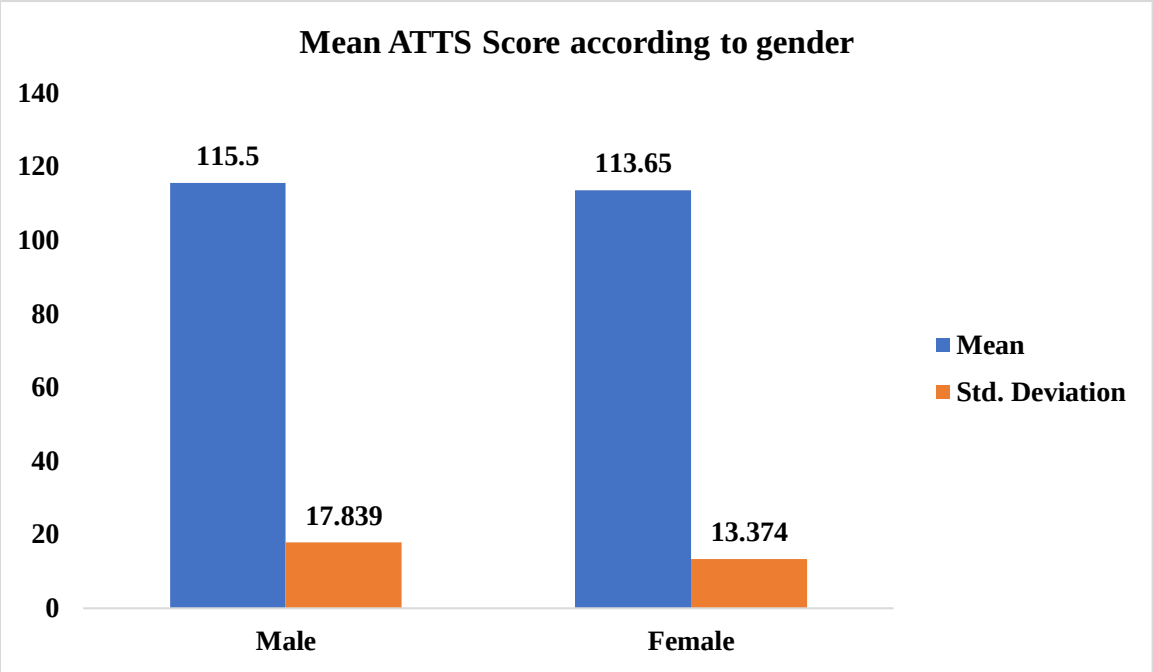


Table 18: Mean ATTS Score according to marital status

	Marital Status	Mean	Std. Deviation	t value	p-value
ATTS	Married	100.0	28.0	-2.505	<0.05*
	Unmarried	115.0	15.2		

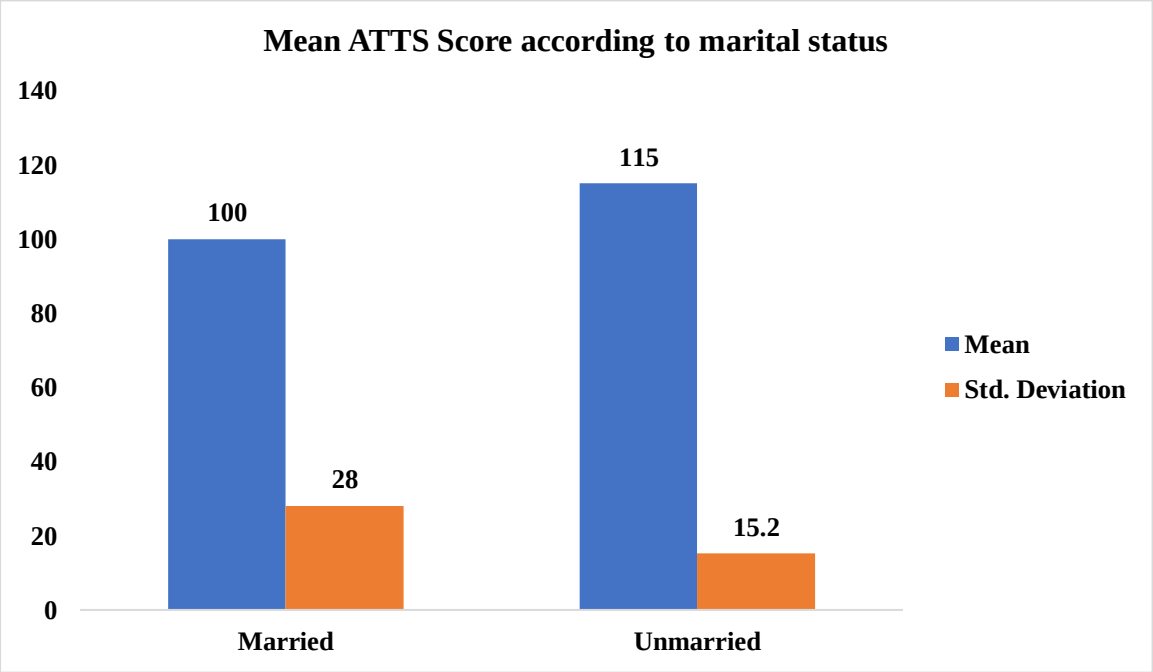


Table 19: Mean ATTS Score according to religion

Religion	ATTS		
	Mean	Variance	ANOVA
Christian	114	126.297	F value: 0.526
Hindu	115.053	1.108	
Muslim	110.684	13.294	p-value: >0.05
Other	109	84.198	
Sikh	109	84.198	

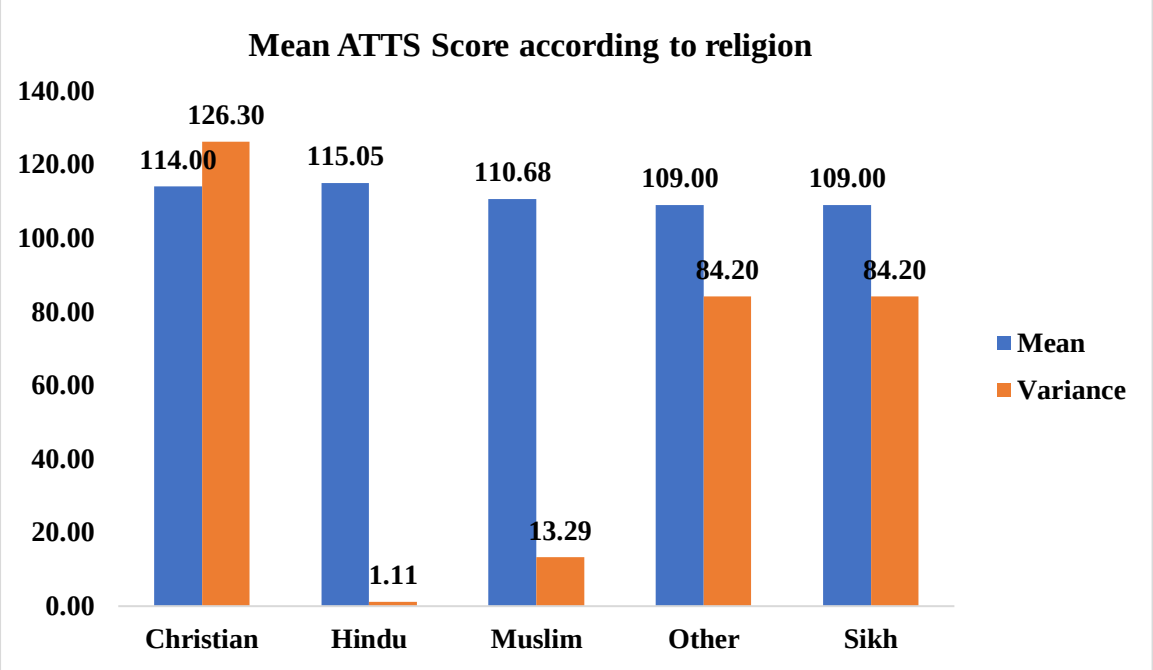


Table 20: Mean ATTS Score according to level of education

Education	ATTS		
	Mean	Variance	ANOVA
1st Year MBBS	111.859	3.408	F value: 2.829
2nd Year MBBS	118.256	6.205	
3rd Year MBBS	111.556	6.722	p-value: <0.05*
4th Year MBBS	117	7.118	
Intern	118.788	4.654	
Postgraduate	108.348	10.522	

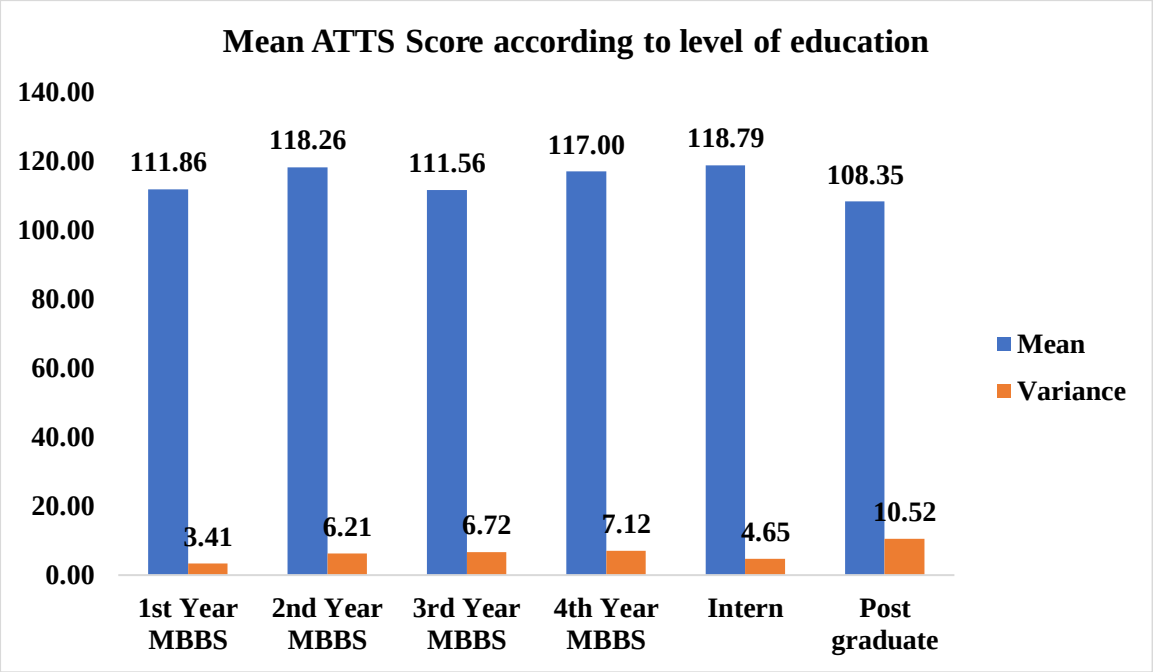


Table 21: Mean ATTS Score according to the place of residence

	Place of residence	Mean	Std. Deviation	t value	p-value
ATTS	Urban	114.62	15.428	0.116	>0.05
	Rural	114.25	18.63		

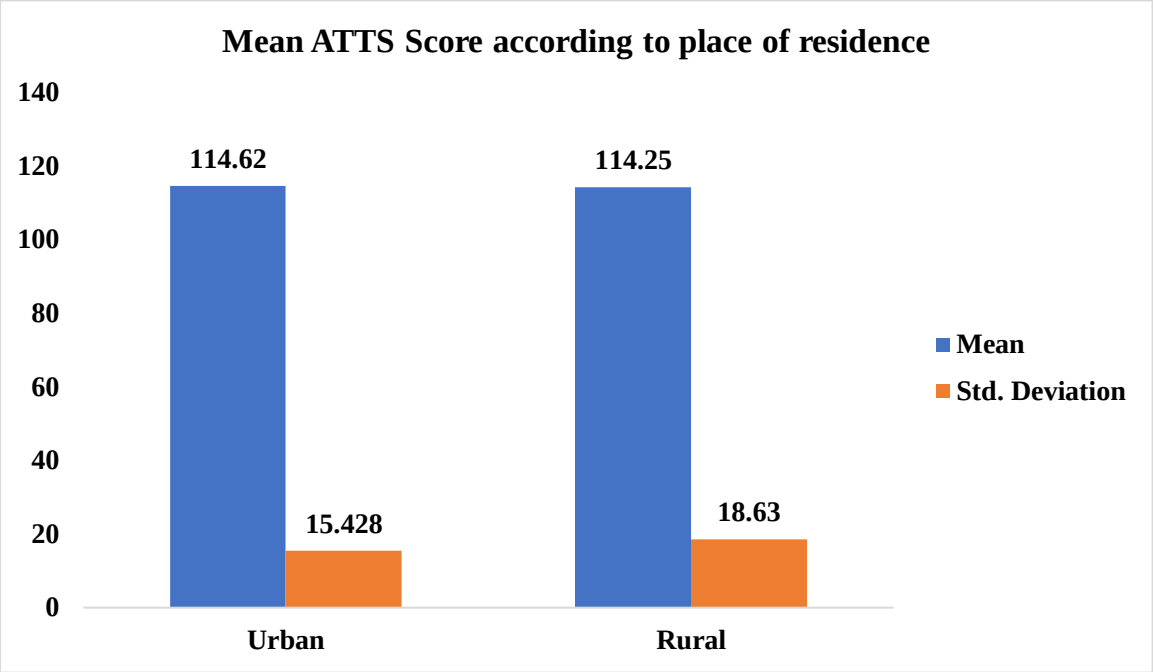


Table 22: Mean ATTS Score according to socio economic status

Socio-Economic status	ATTS		
	Mean	Variance	ANOVA
Upper	116.05	1.80	F value: 2.102
Middle	112.46	2.22	
Lower	121.40	49.71	p value: >0.05

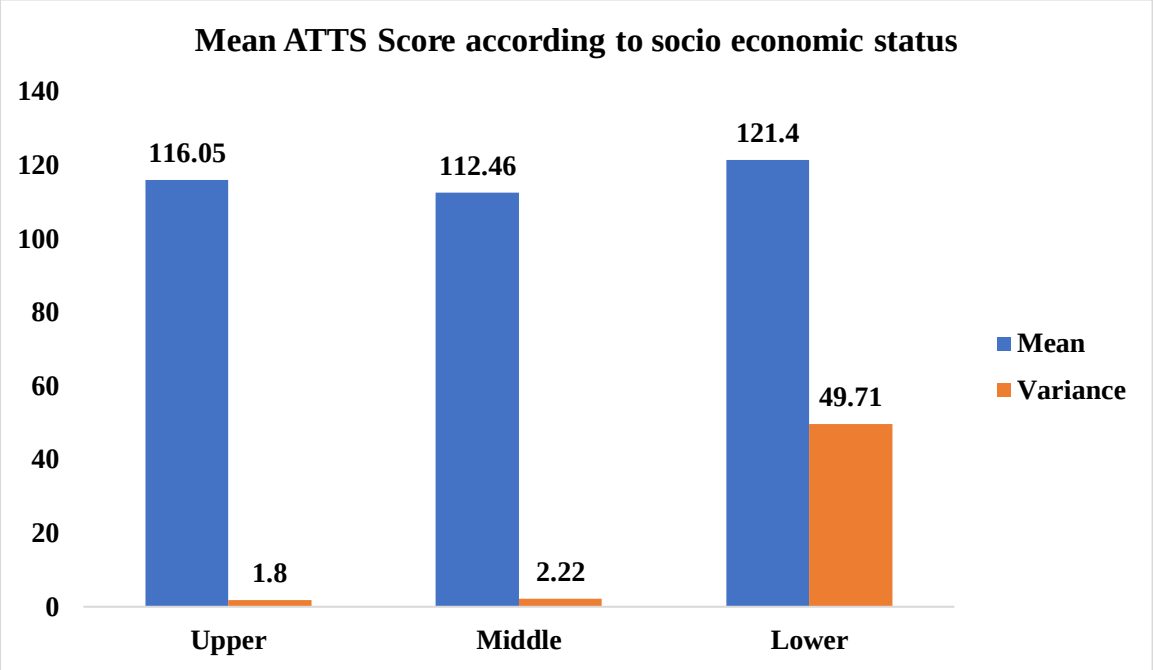


Table 23: Mean ATTS Score according to type of family

Type of Family	ATTS		
	Mean	Variance	ANOVA
Extended	113.643	18.038	F value: 0.071
Joint	114.086	4.354	
Nuclear	114.803	1.38	p-value: >0.05

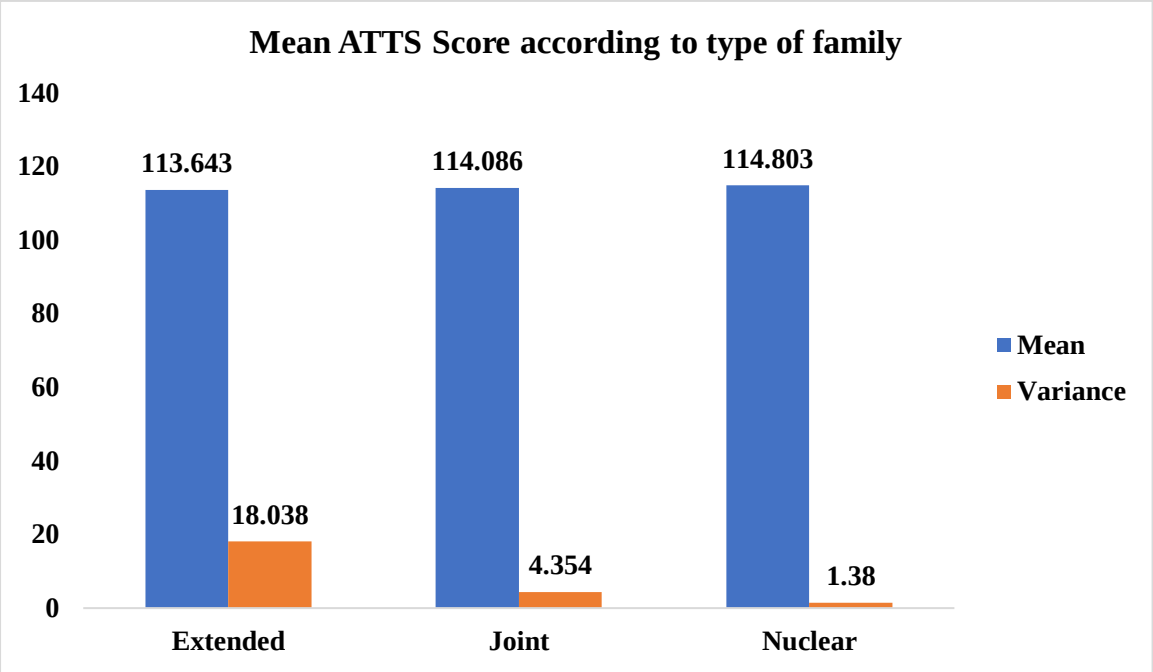


Table 24: Mean ATTS Score according to family history of psychiatric illness

	Family history of psychiatric illness:	Mean	Std. Deviation	t value	p-value
ATTS	Yes	112.21	9.382	-0.576	>0.05
	No	114.71	16.065		

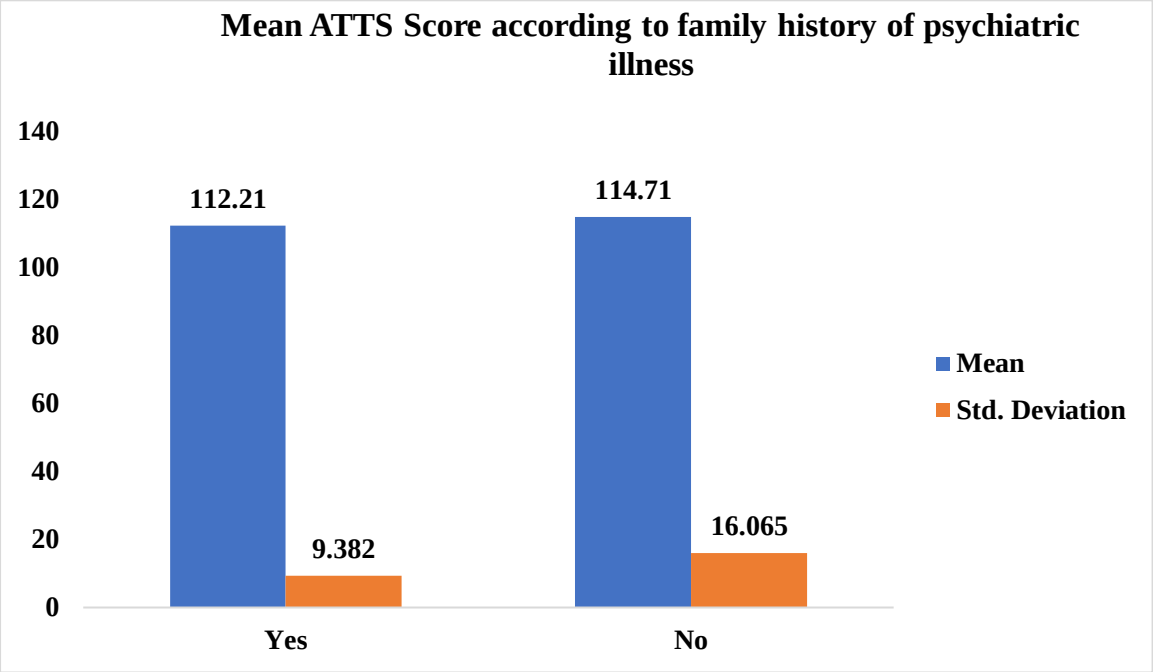


Table 25: Mean ATTS Score according to personal history of psychiatric illness

	Personal history of psychiatric illness	Mean	Std. Deviation	t value	p-value
ATTS	Yes	114.57	13.304	-0.004	>0.05
	No	114.58	16.019		

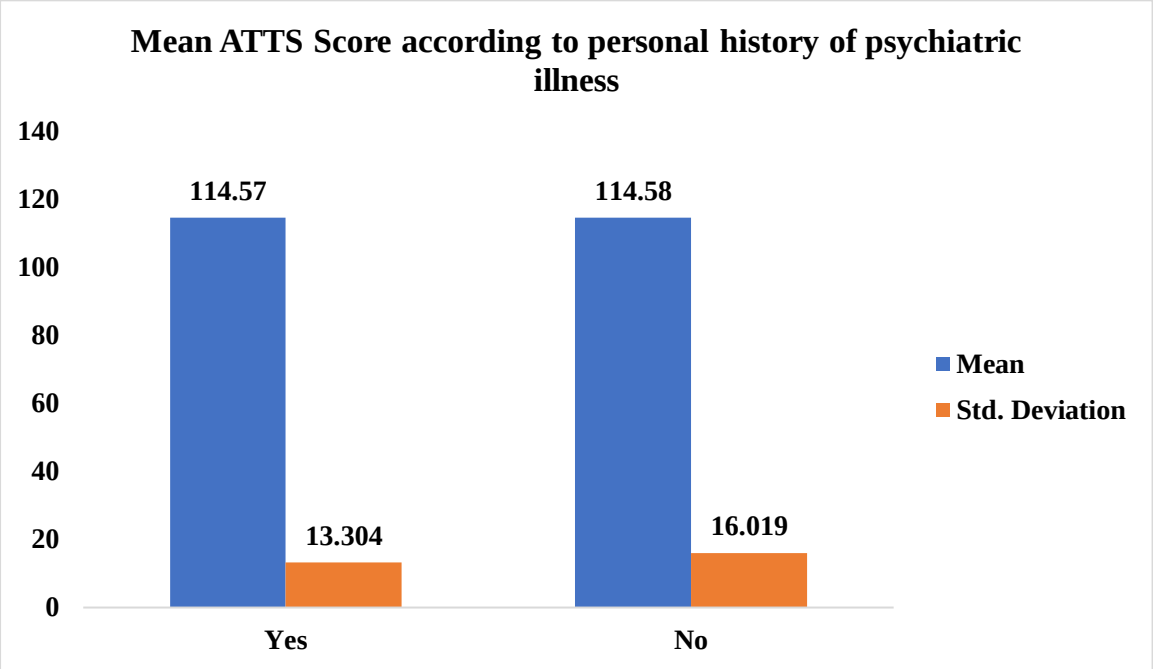


Table 26: Mean ATTS Score according to any personal history of Suicidal Ideation/ Intent/ attempt

	Any personal history of Suicidal Ideation/ Intent/ attempt?	Mean	Std. Deviation	t value	p-value
ATTS	Yes	110.1	16.467	-1.324	>0.05
	No	114.96	15.687		

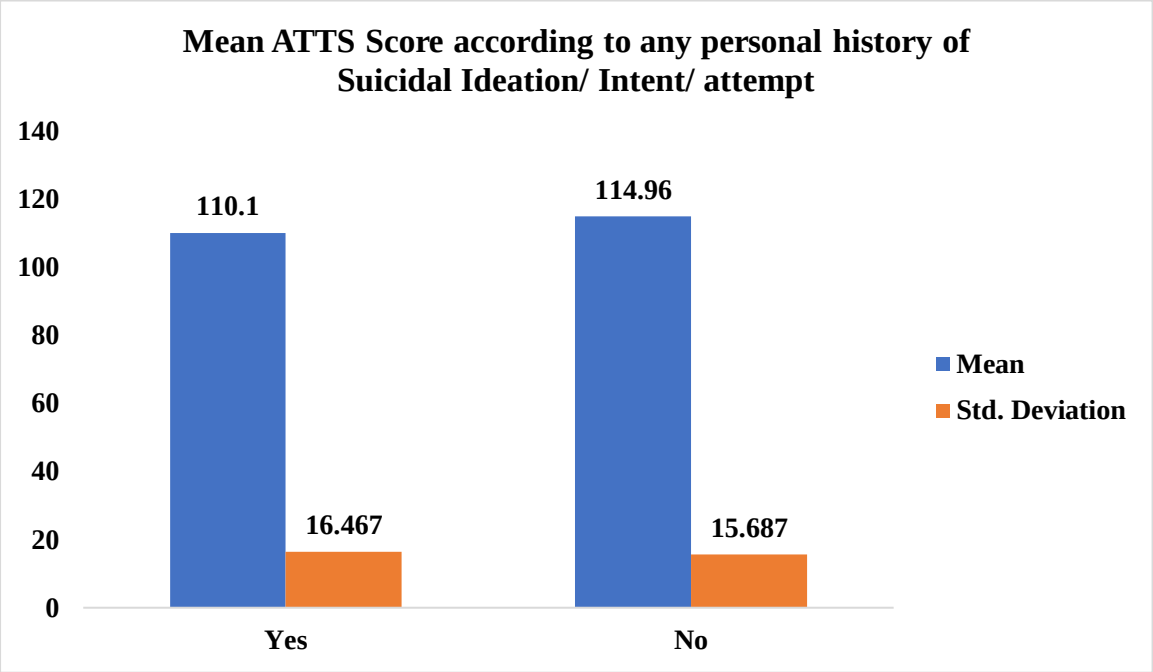


Table 27: Mean ATTS Score according to Any other substance abuse

	Any other substance abuse	Mean	Std. Deviation	t value	p-value
ATTS	Yes	114.79	9.97	0.061	>0.05
	No	114.56	16.161		

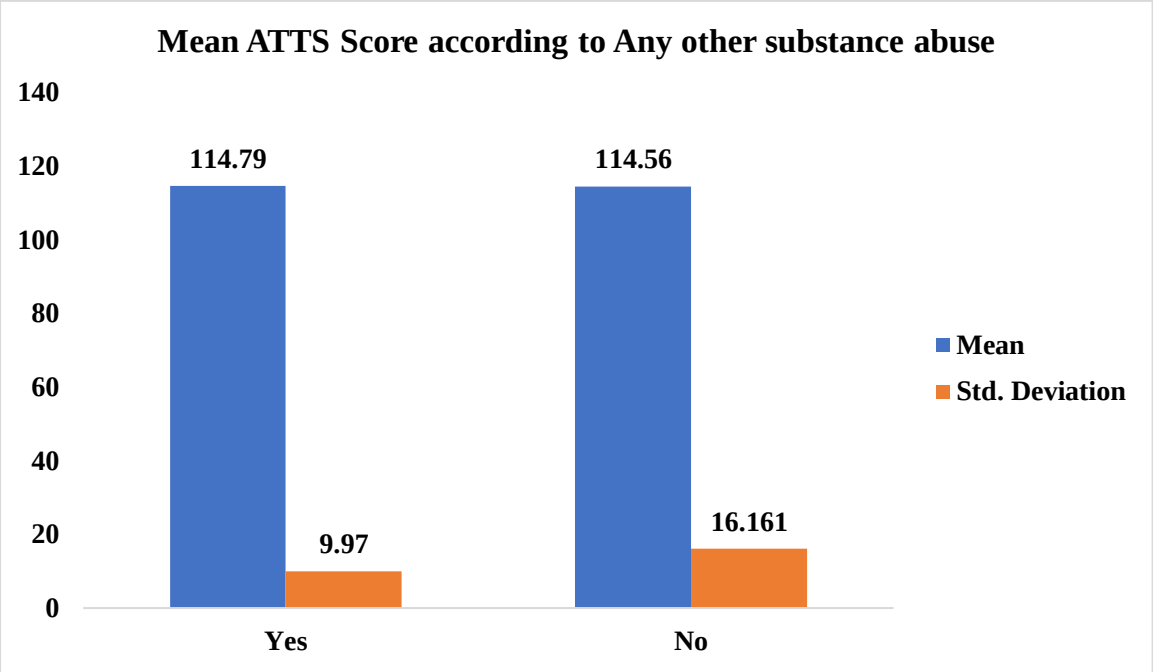


Table 28: Mean ATTS Score according to Any experience of contact with persons at high risk for suicide or self-harm

	Any experience of contact with persons at high risk for suicide or self-harm?	Mean	Std. Deviation	t value	p-value
ATTS	Yes	113.73	18.177	-0.591	>0.05
	No	114.98	14.507		

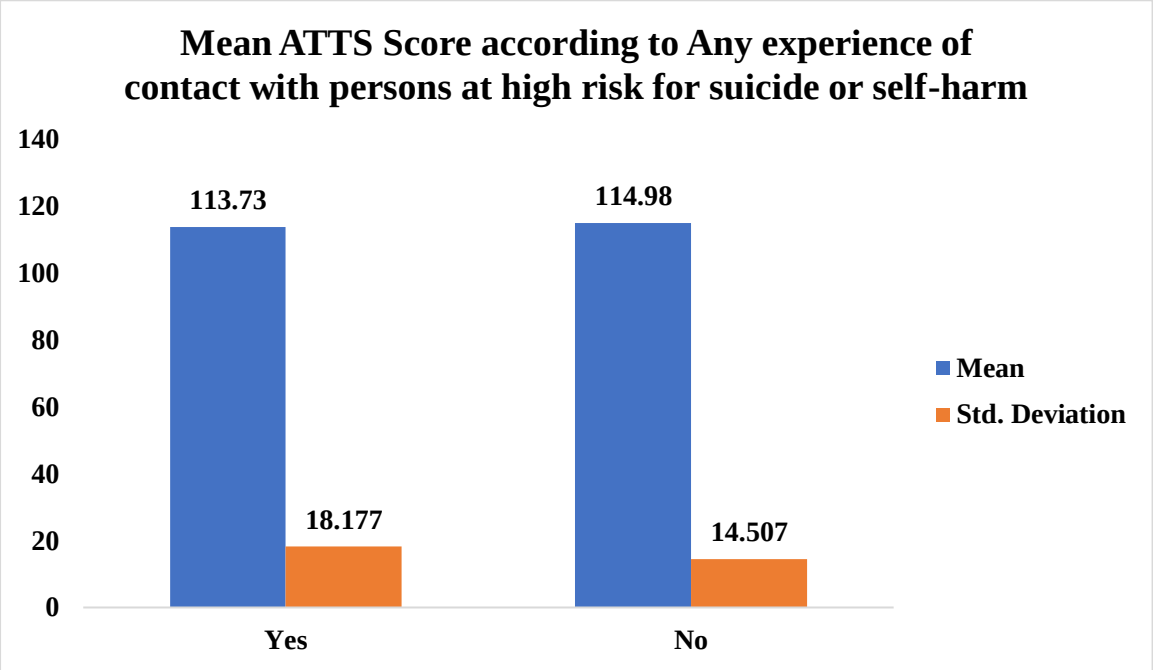


Table 29: ATSP scale

No.	Response	Strongly disagree (n,%)	Disagree (n,%)	Uncertain (n,%)	Strongly agree (n,%)	Agree (n,%)
1	I resent being asked to do more about suicide	21, (8.2%)	67, (26.3%)	120, (47.1%)	15, (5.9%)	32, (12.5%)
2	Suicide prevention is not my responsibility	67, (26.3%)	117, (45.9%)	40, (15.7%)	9, (3.5%)	22, (8.6%)
3	Making more funds available to the appropriate health services would make no difference to the suicide rate	31, (12.2%)	83, (32.5%)	79, (31%)	11, (4.3%)	51, (20%)
4	Working with suicidal patients is rewarding	9, (3.5%)	29, (11.4%)	82, (32.2%)	34, (13.3%)	101, (39.6%)
5	If people are serious about committing suicide they do not tell anyone	16, (6.3%)	45, (17.6%)	79, (31%)	26, (10.2%)	89, (34.9%)

6	I feel defensive when people offer advice about suicide prevention	25, (9.8%)	86, (33.7%)	89, (34.9%)	10, (3.9%)	45, (17.6%)
7	It is easy for people to be not involved in clinical practice to make judgments about suicide prevention	3, (1.2%)	40, (15.7%)	106, (41.6%)	19, (7.5%)	87, (34.1%)
8	If a person survives a suicide attempt, this was a play for attention	39, (15.3%)	75, (29.4%)	72, (28.2%)	18, (7.1%)	51, (20%)
9	People have a right to take their own lives	59, (23.1%)	68, (26.7%)	74, (29%)	13, (5.1%)	41, (16.1%)
10	Since unemployment & poverty are the main causes of suicide, there is little that an individual can	19, (7.5%)	75, (29.4%)	73, (28.6%)	18, (7.1%)	70, (27.5%)

	do to prevent it					
11	I do not feel comfortable assessing someone for suicide risk	35, (13.7%)	80, (31.4%)	77, (30.2%)	9, (3.5%)	54, (21.2%)
12	Suicide prevention measures are a drain on resources, which would be more useful elsewhere	43, (16.9%)	77, (30.2%)	89, (34.9%)	10, (3.9%)	36, (14.1%)
13	There is no way of knowing who is going to commit suicide	21, (8.2%)	77, (30.2%)	66, (25.9%)	17, (6.7%)	74, (29%)
14	A significant proportion of suicides are preventable	3, (1.2%)	13, (5.1%)	52, (20.4%)	59, (23.1%)	128, (50.2%)

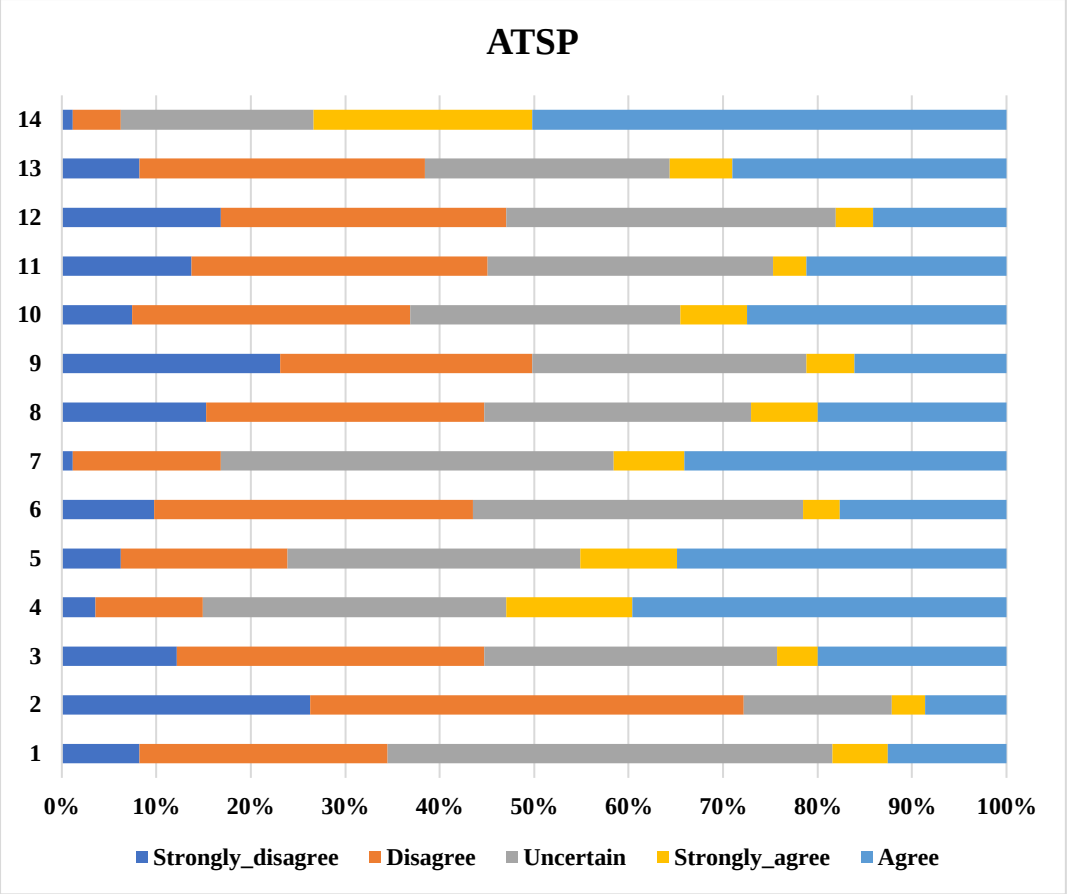

ATSP
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Strongly_disagree
Disagree
Uncertain
Strongly_agree
Agree

Table 30: Mean ATSP Score according to age group

	Age group	Mean	Std. Deviation	t value	p value
ATSP	<25	41.31	6.661	2.656	<0.05*
	>=25	38.23	6.615		

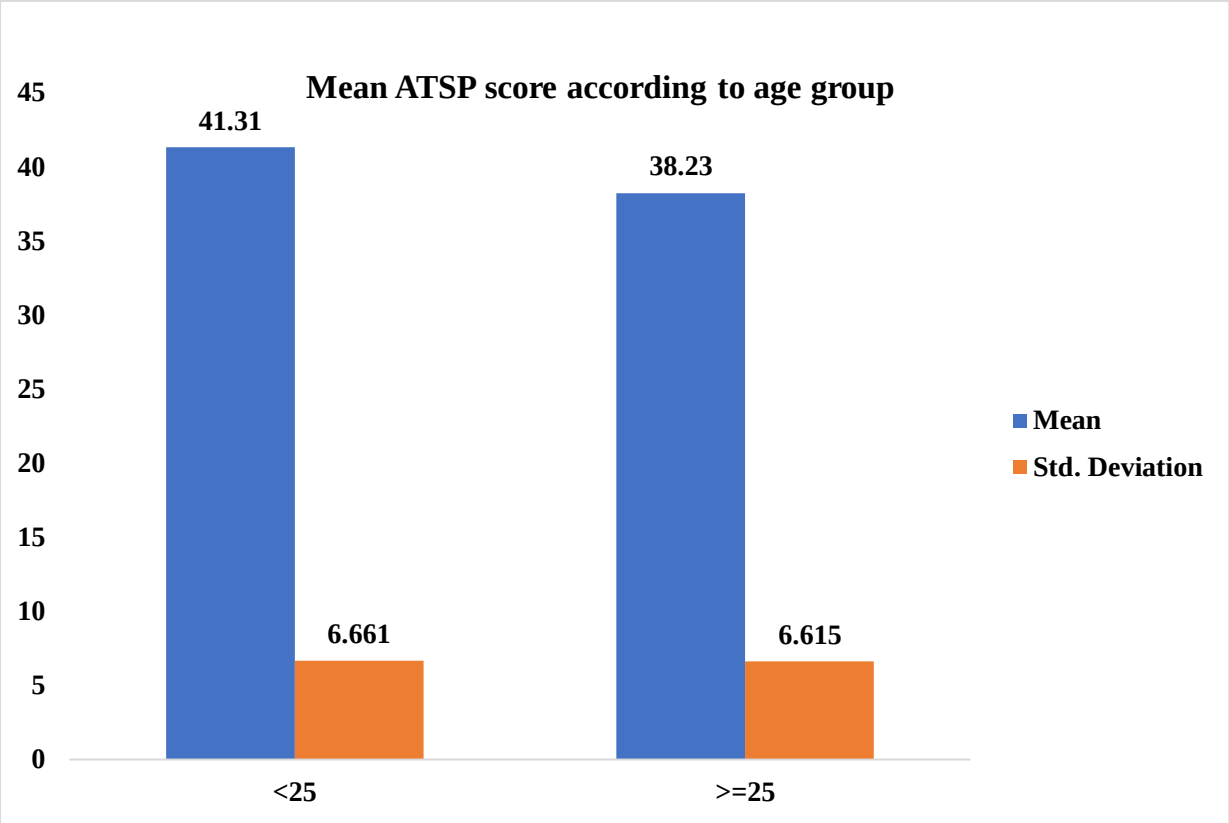


Table 31: Mean ATSP Score according to gender

	Gender	Mean	Std. Deviation	t value	p value
ATSP	Male	41.36	7.57	1.249	>0.05
	Female	40.31	5.751		

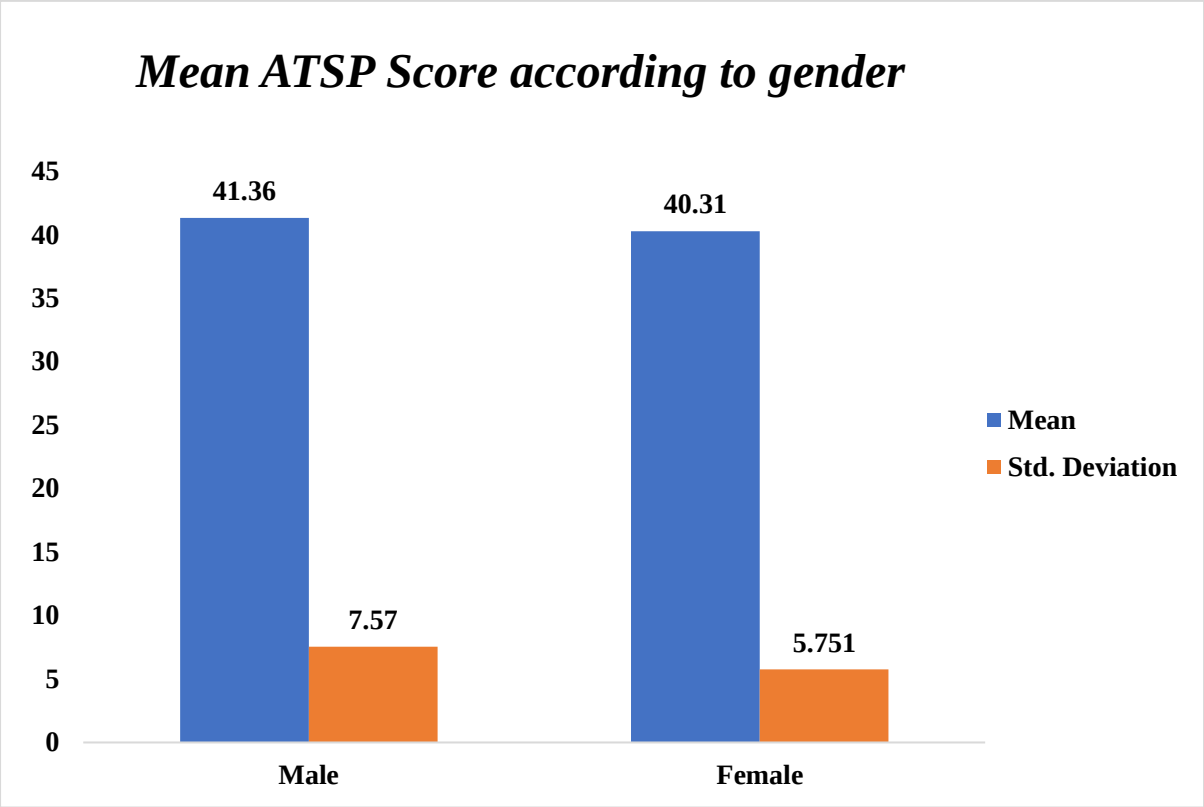


Table 32: Mean ATSP Score according to marital status

	Marital Status	Mean	Std. Deviation	t value	p value
ATSP	Married	34.1	9.4	-2.695	<0.05*
	Unmarried	41.0	6.6		

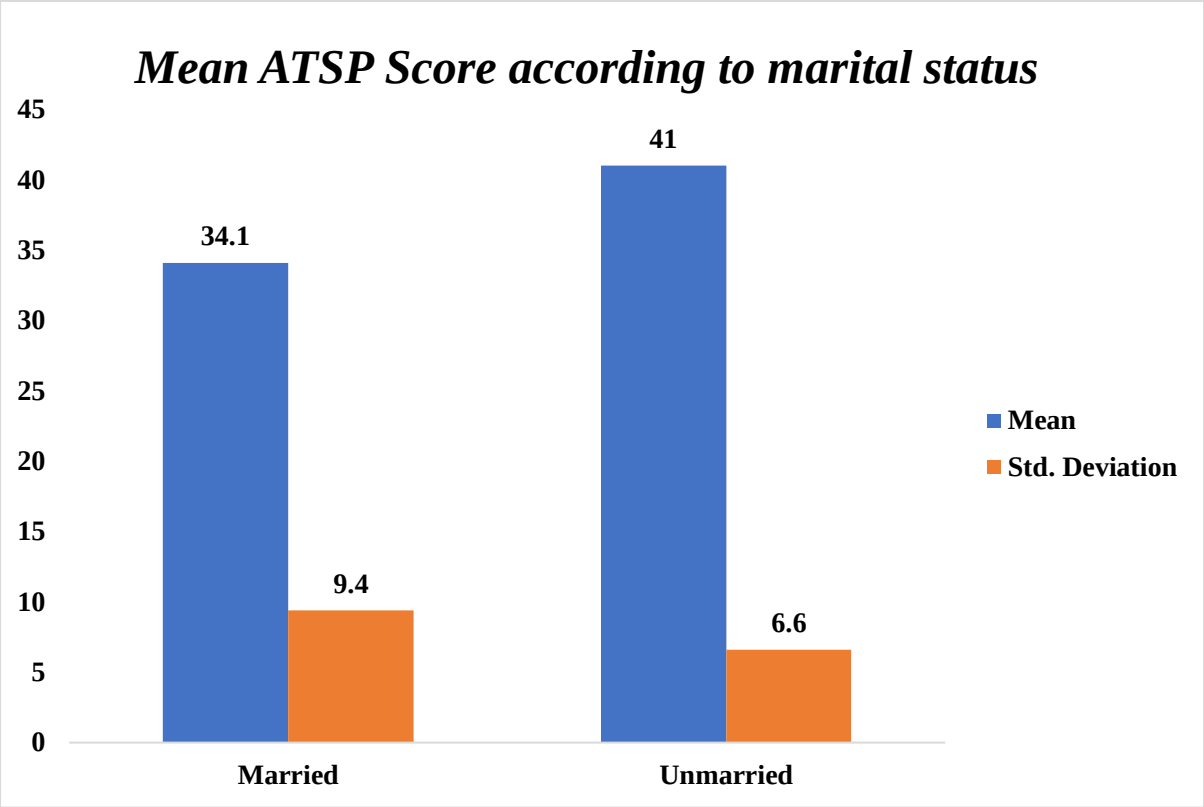


Table 33: Mean ATSP Score according to religion

Religion	ATSP		
	Mean	Variance	ANOVA
Christian	42	23.065	F value: 0.409
Hindu	40.877	0.202	
Muslim	41.263	2.428	p value: >0.05
Other	38	15.377	
Sikh	37	15.377	

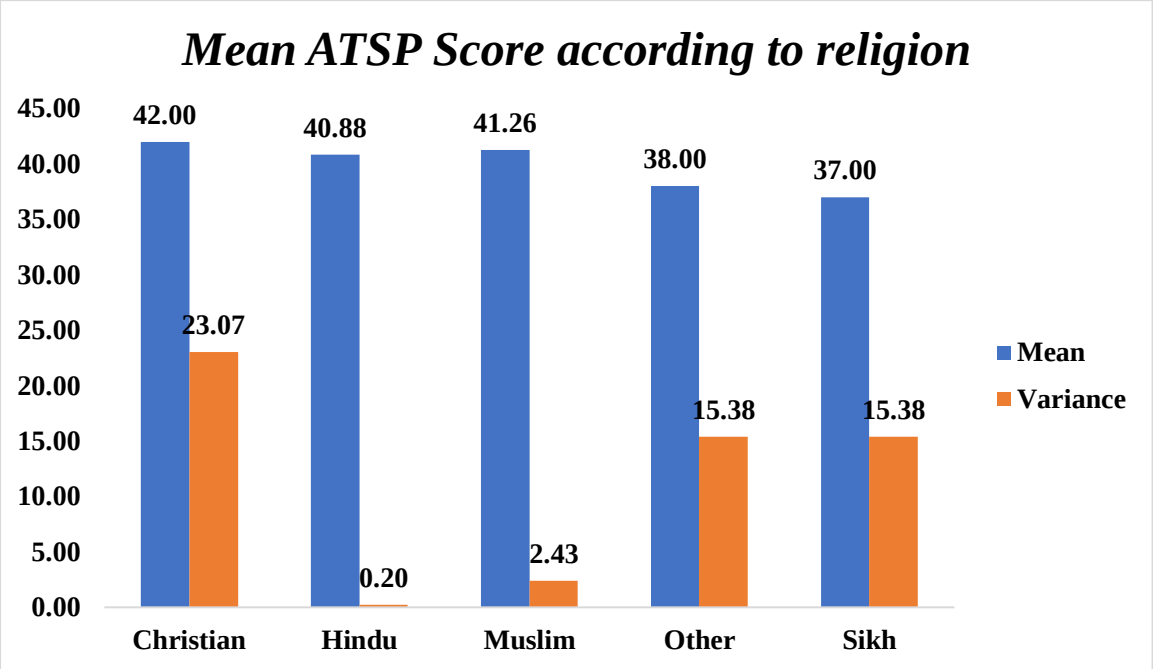


Table 34: Mean ATSP Score according to place of residence

	Place of residence	Mean	Std. Deviation	t value	p value
ATSP	Urban	40.57	6.628	-1.811	>0.05
	Rural	43	7.298		

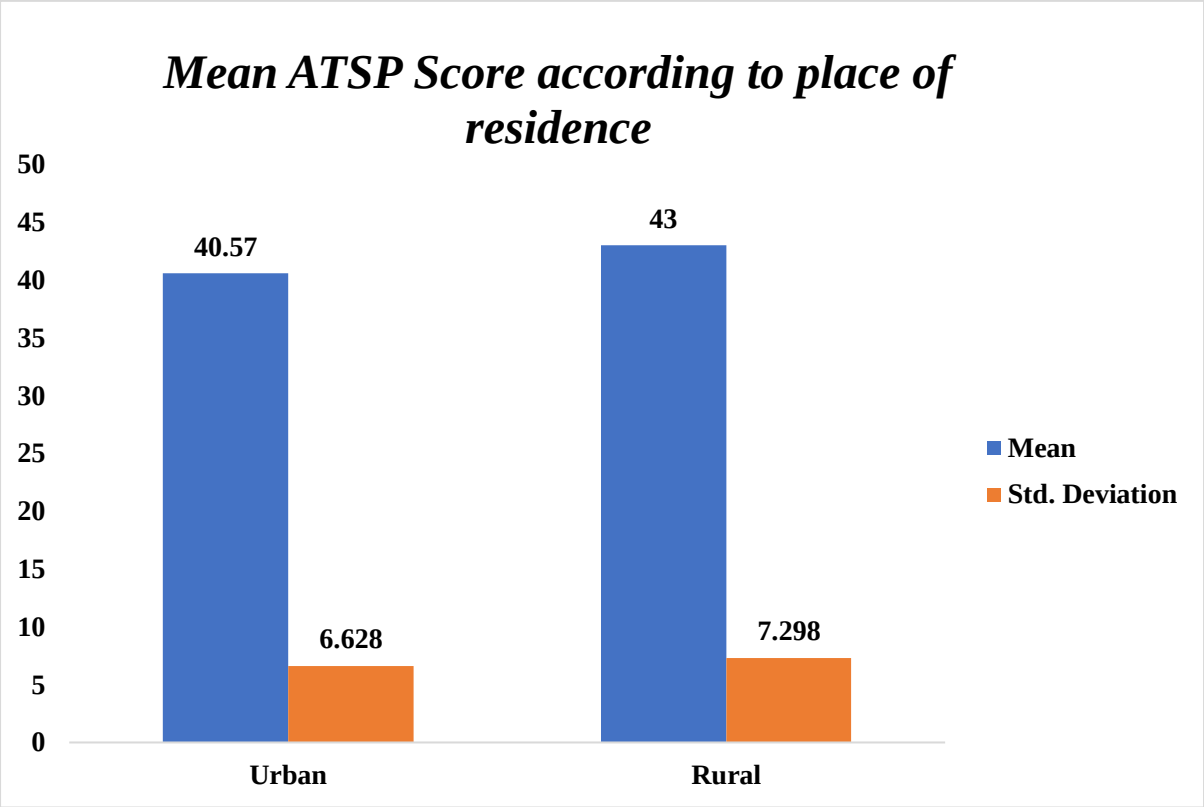


Table 35: Mean ATSP Score according to level of education

Education	ATSP		
	Mean	Variance	ANOVA
1st Year MBBS	40.69	0.62	F value: 2.735
2nd Year MBBS	40.95	1.13	
3rd Year MBBS	40.81	1.23	p value: <0.05*
4th Year MBBS	40.65	1.30	
Intern	42.89	0.85	
Post graduate	36.78	1.92	

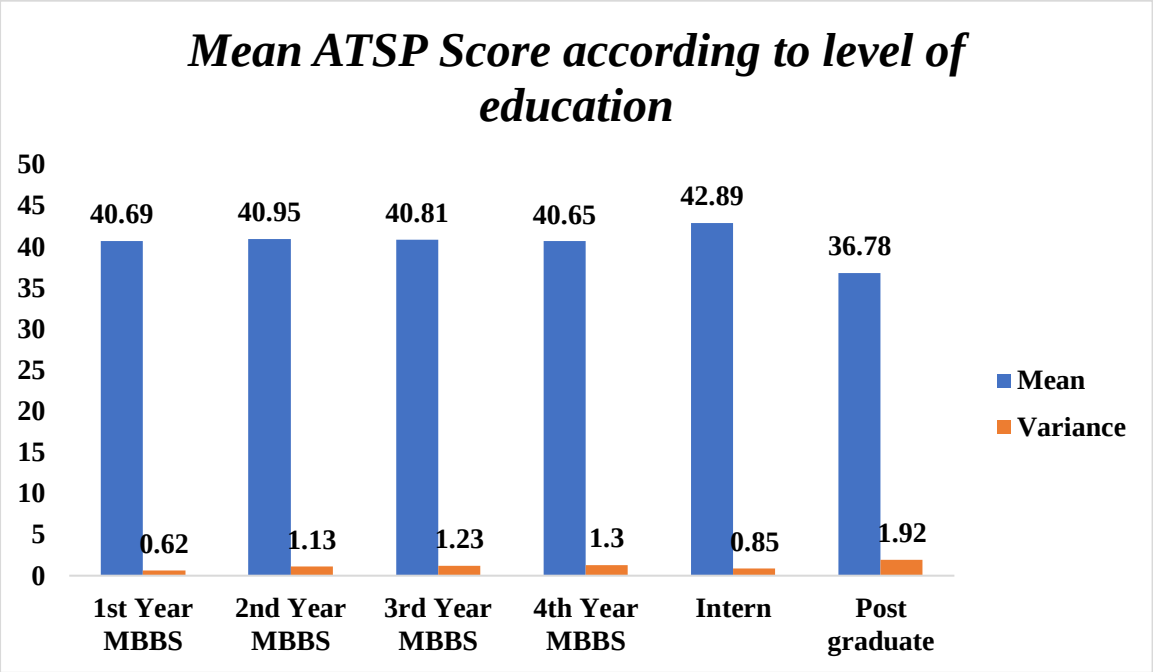


Table 36: Mean ATSP Score according to socio economic status

Socio-Economic status	ATSP		
	Mean	Variance	ANOVA
Upper	41.49	0.33	F value: 3.220
Middle	39.82	0.40	
Lower	45.60	8.98	p value: <0.05*

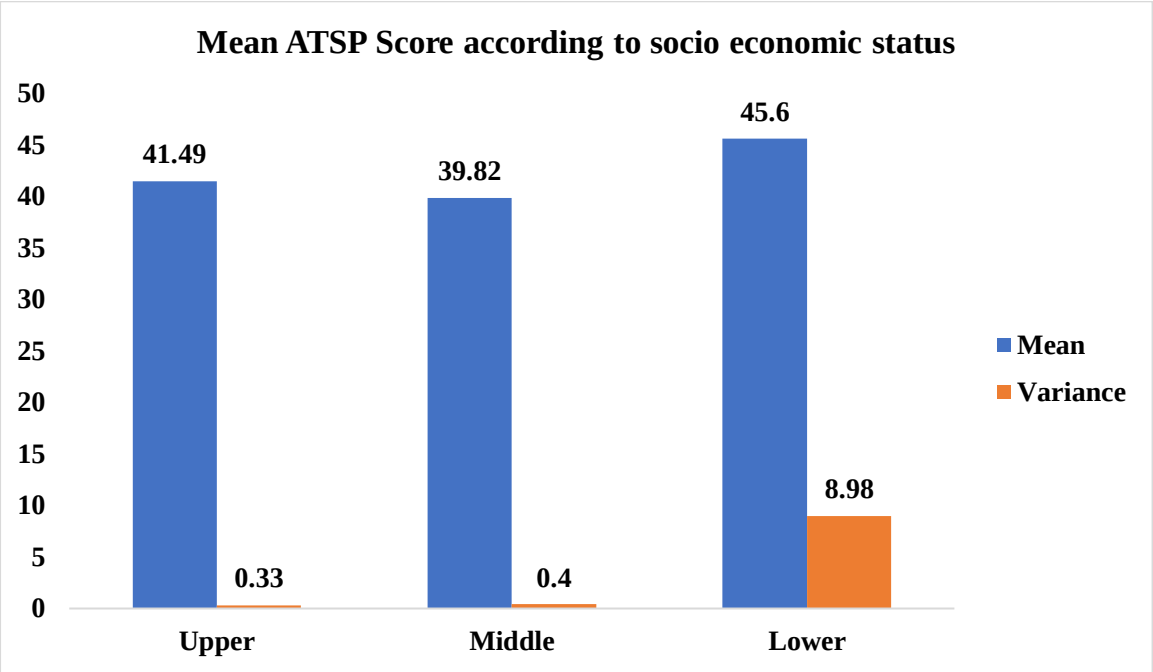


Table 37: Mean ATSP Score according to type of family

Type of Family	ATSP		
	Mean	Variance	ANOVA
Extended	38.07	3.26	F value: 1.298
Joint	40.76	0.79	
Nuclear	41.07	0.25	p value: >0.05

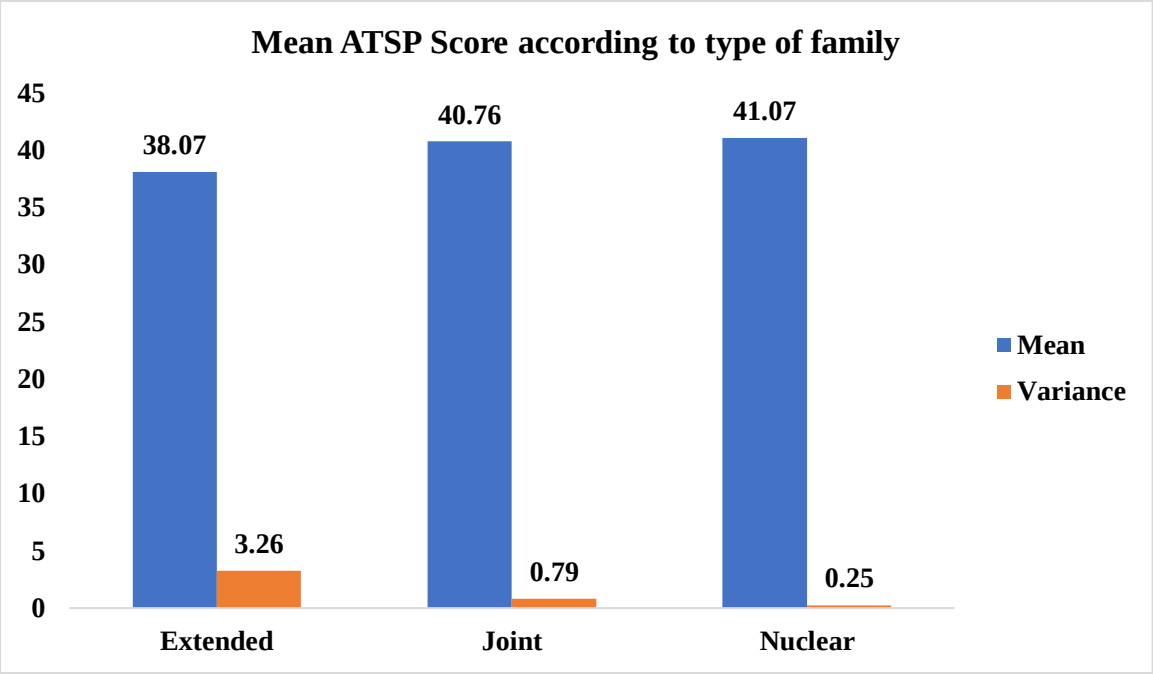


Table 38: Mean ATSP score according to Family history of psychiatric illness

	Family history of psychiatric illness	Mean	Std. Deviation	t value	p value
ATSP	Yes	40	5.189	-0.477	>0.05
	No	40.88	6.817		

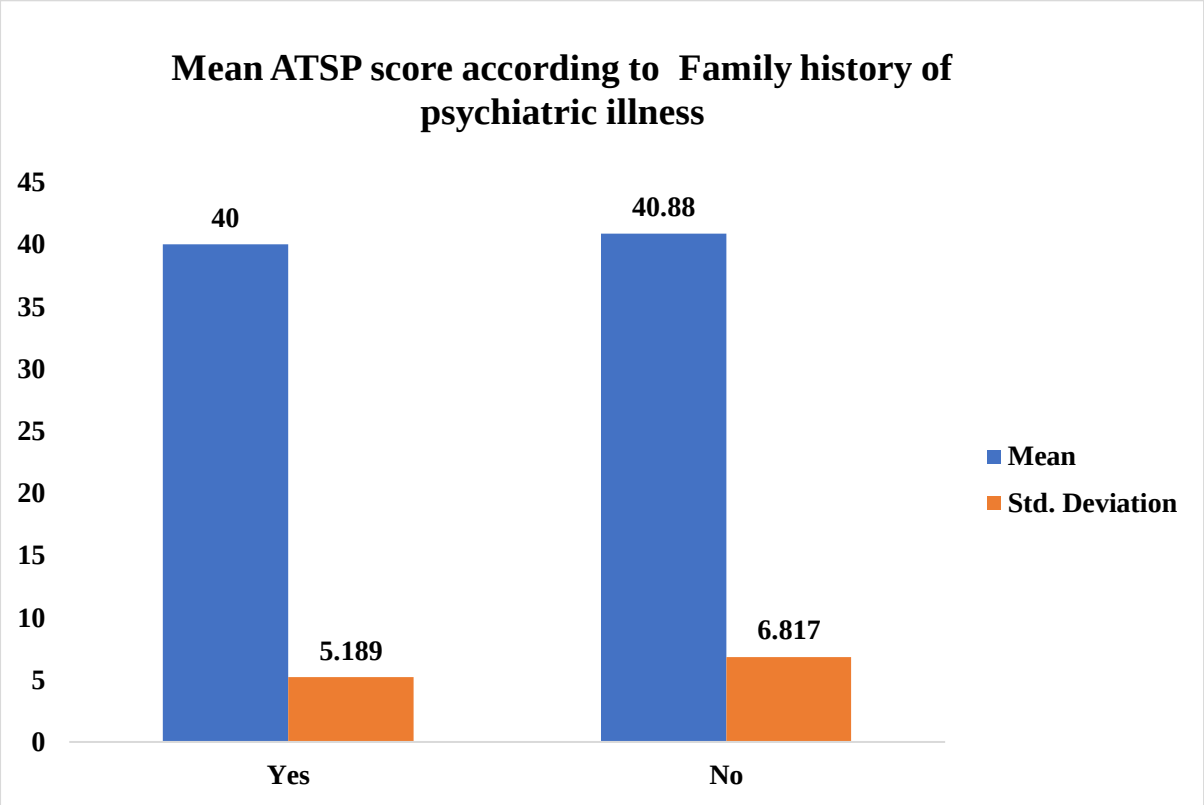


Table39: Mean ATSP score according to Personal history of psychiatric illness

	Personal history of psychiatric illness:	Mean	Std. Deviation	t value	p value
ATSP	Yes	38.83	4.764	-1.504	>0.05
	No	41.03	6.874		

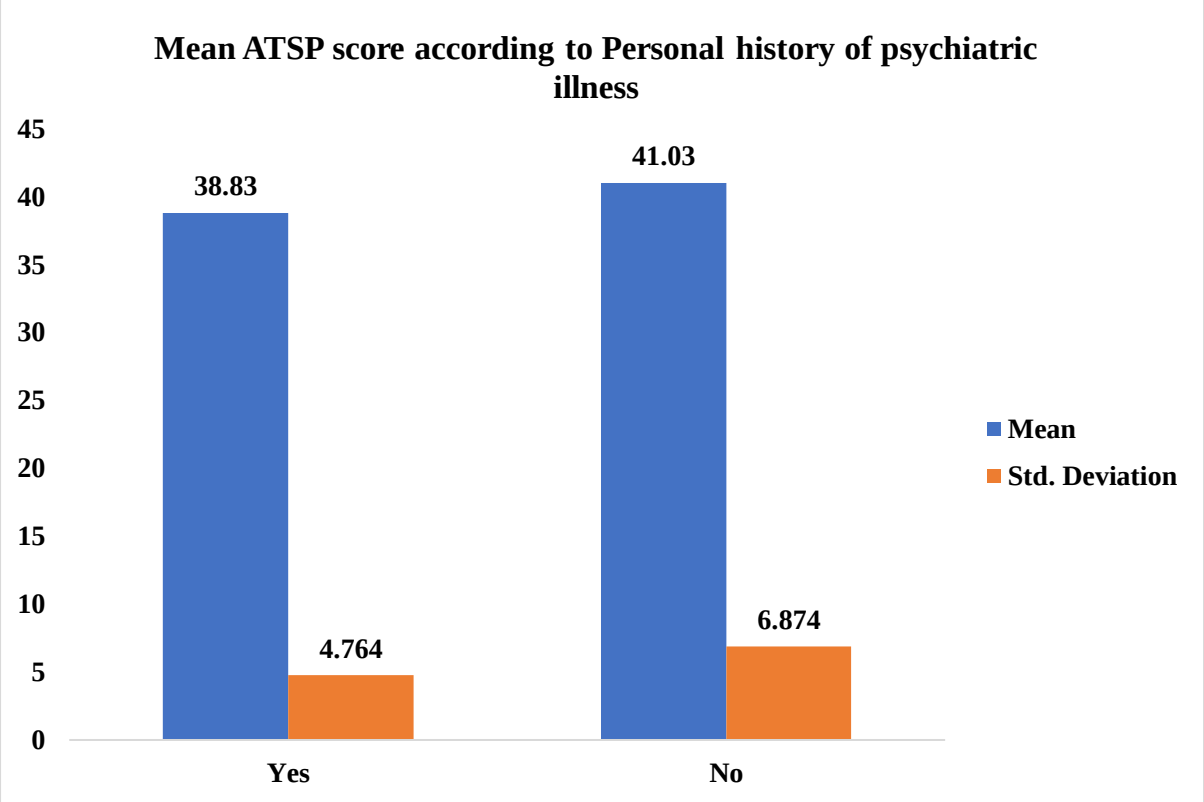


Table40: Mean ATSP score according to any personal history of Suicidal Ideation/ Intent/ attempt

	Any personal history of Suicidal Ideation/ Intent/ attempt?	Mean	Std. Deviation	t value	p value
ATSP	Yes	38	5.458	-1.973	<0.05*
	No	41.08	6.786		

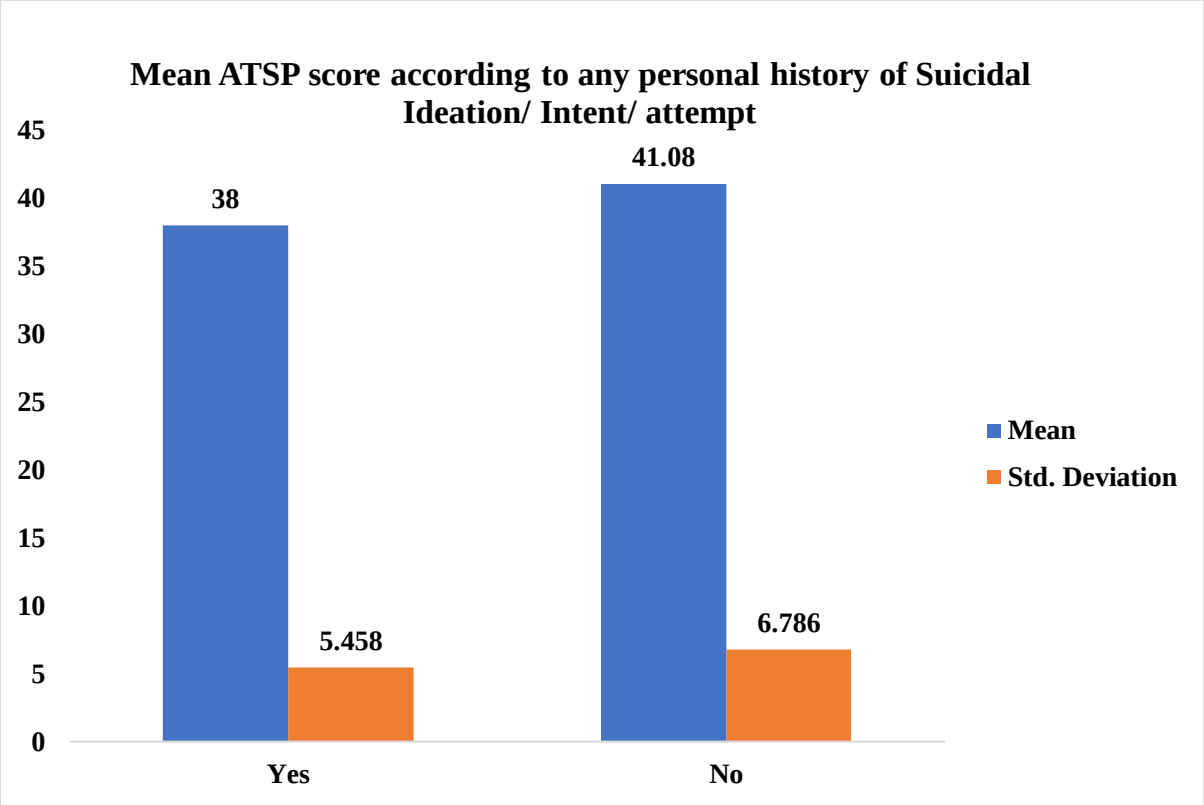


Table 41: Mean ATSP score according to any other substance abuse

	Any other substance abuse	Mean	Std. Deviation	t value	p value
ATSP	Yes	40.05	6.51	-0.526	>0.05
	No	40.9	6.76		

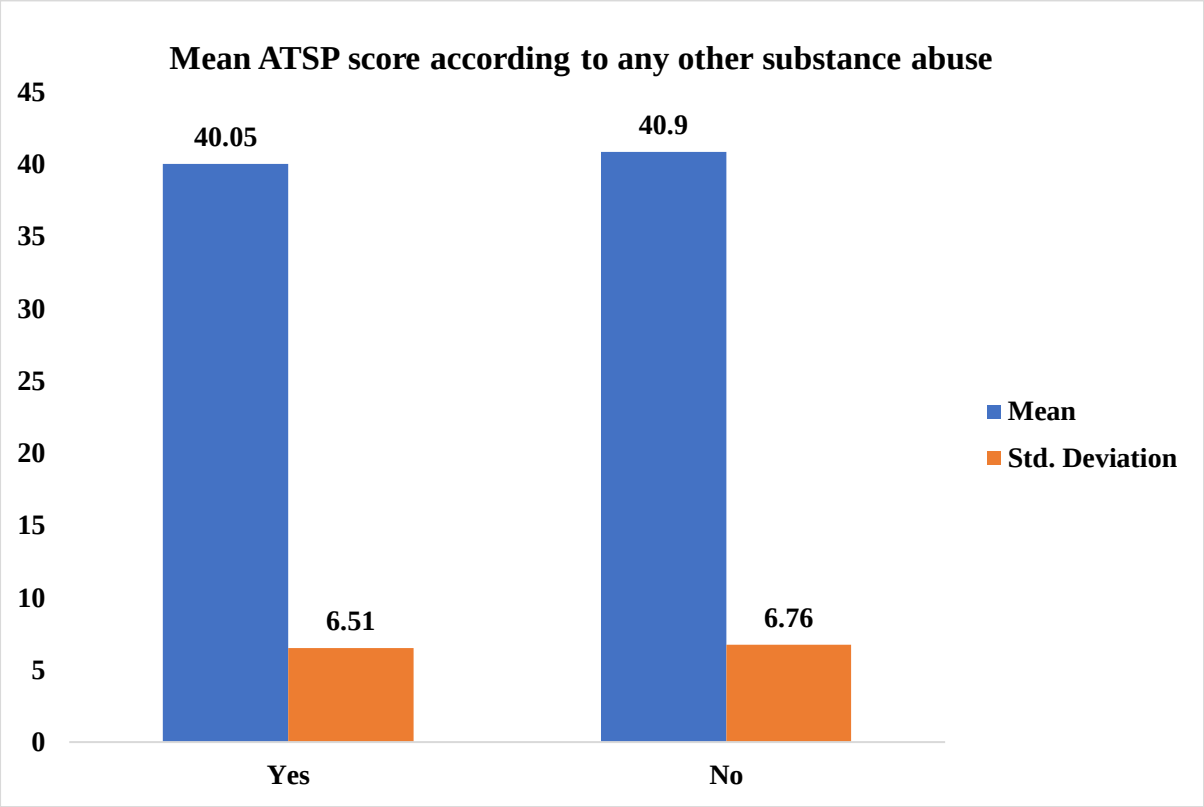


Table 42: Mean ATSP score according to any experience of contact with persons at high risk for suicide or self-harm

	Any experience of contact with persons at high risk for suicide or self-harm?	Mean	Std. Deviation	t value	p value
ATSP	Yes	41.41	7.118	0.946	>0.05
	No	40.56	6.543		

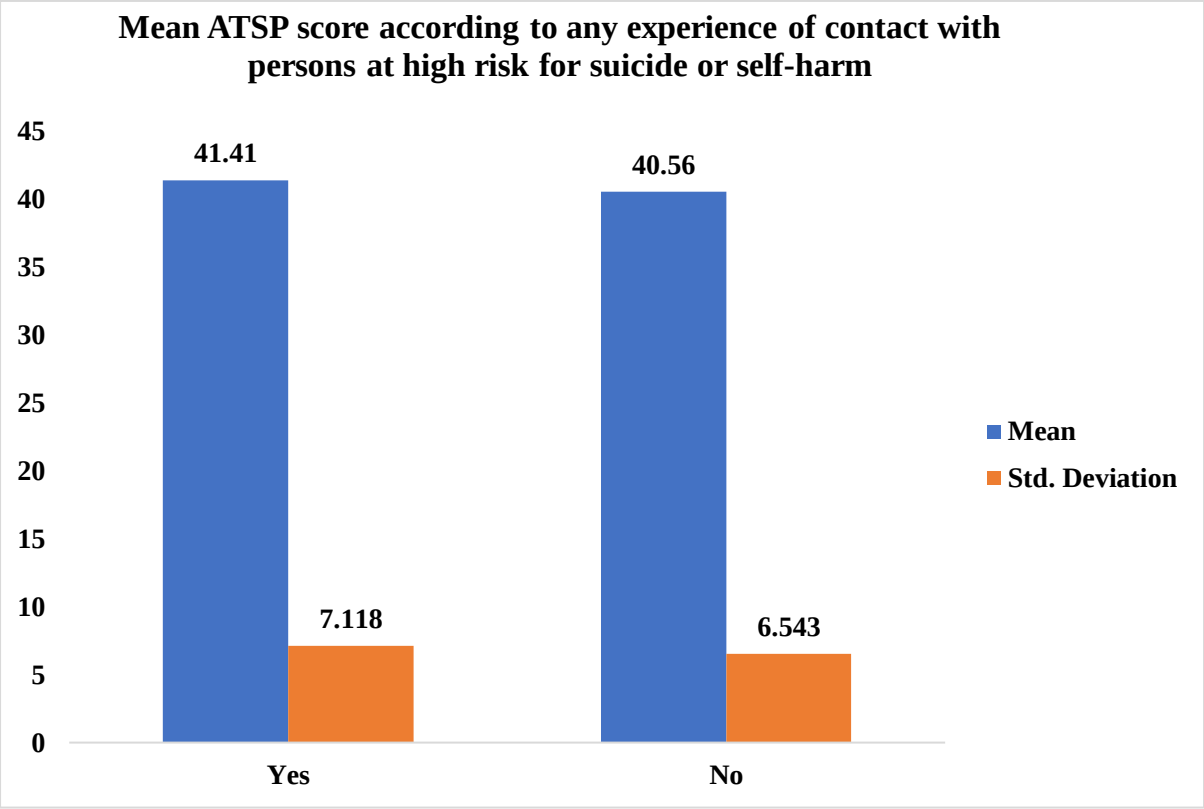


Table 43: Mean ATTS score according to ZUNG depression status

ZUNG Depression	ATTS		
	Mean	Variance	ANOVA
Normal	112.77	1.93	F value: 3.438
Mild Depression	115.10	2.12	
Moderately Depressed	125.73	22.15	p value: <0.05*
Severely Depressed	129.67	81.23	

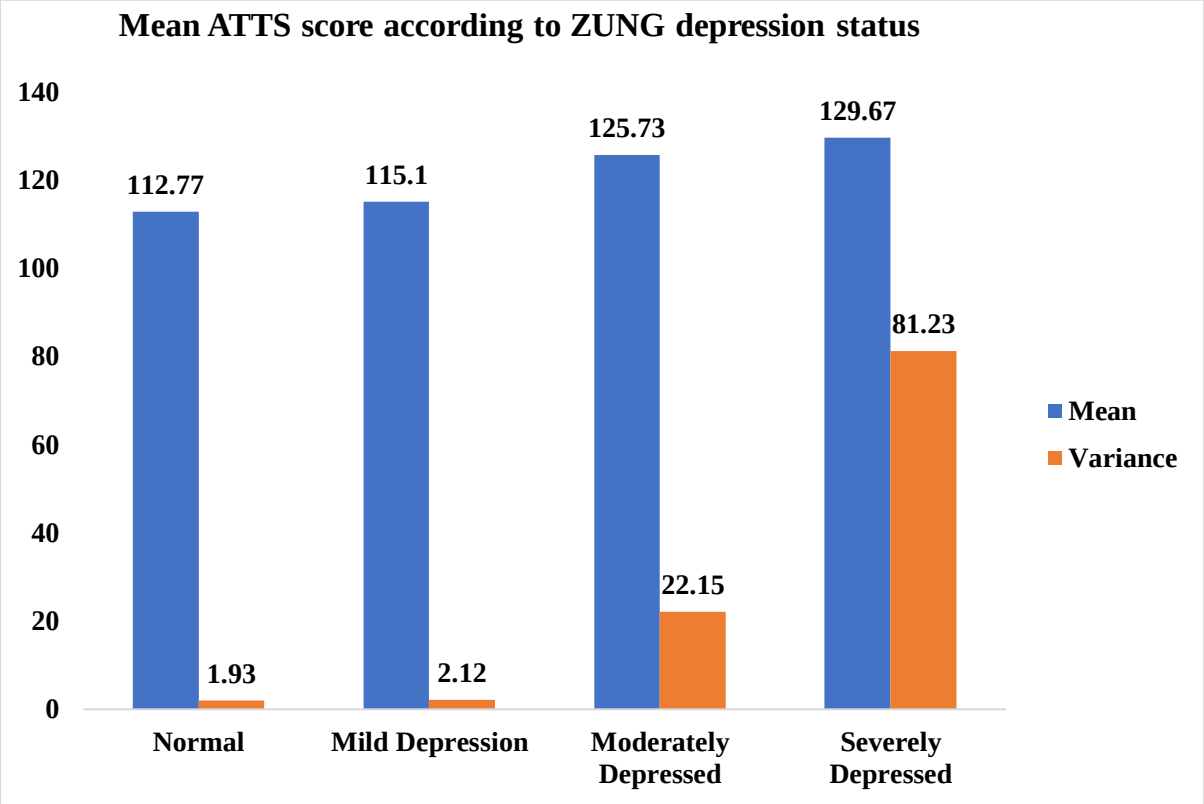


Table 44: Mean ATSP score according to ZUNG depression status

ZUNG Depression	ATSP		
	Mean	Variance	ANOVA
Normal	40.14	0.34	F value: 6.871
Mild Depression	40.67	0.37	
Moderately Depressed	48.18	3.89	p value: <0.05*
Severely Depressed	49.33	14.25	

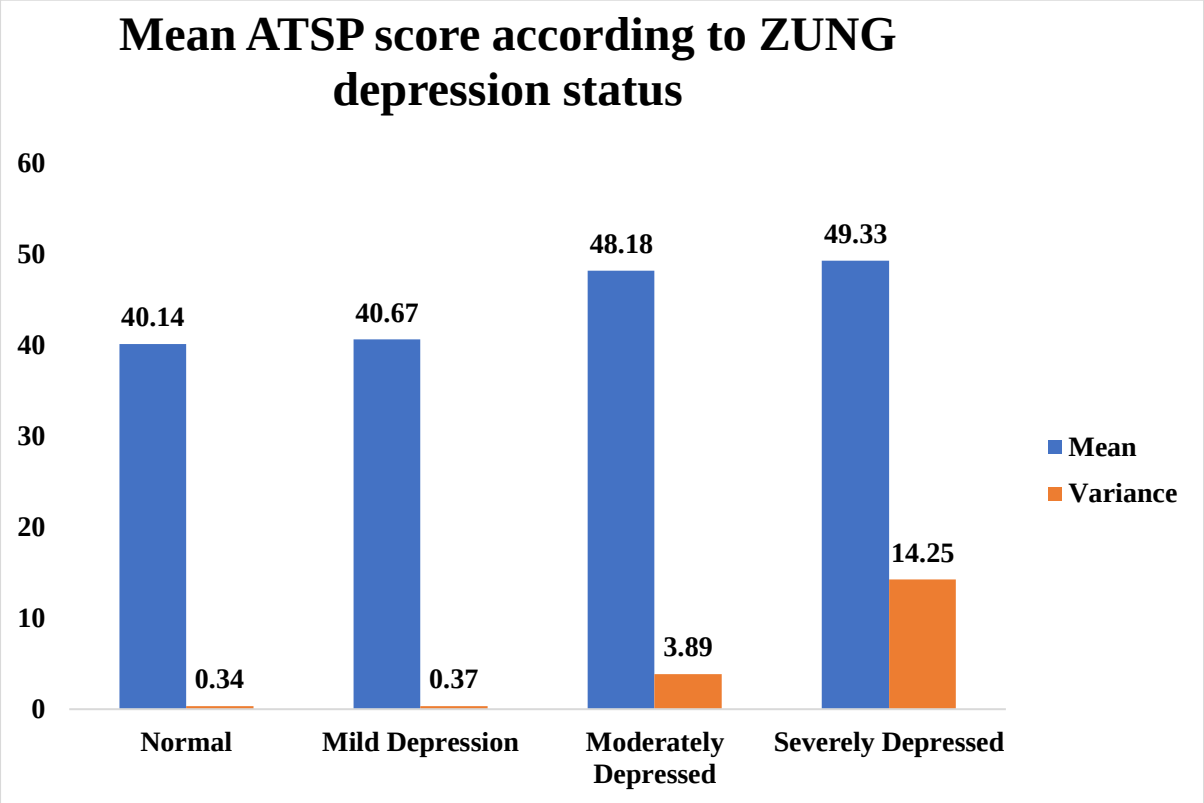


Table 45: Mean ATTS score according to ZUNG anxiety status

ZUNG Anxiety	ATTS		
	Mean	Variance	ANOVA
Normal	109.735	2.355	F value: 8.323
Minimal to Moderate Anxiety	115.21	2.24	
Marked to Severe Anxiety	120.80	5.77	p value: <0.05*
Most extreme Anxiety	126.00	16.48	

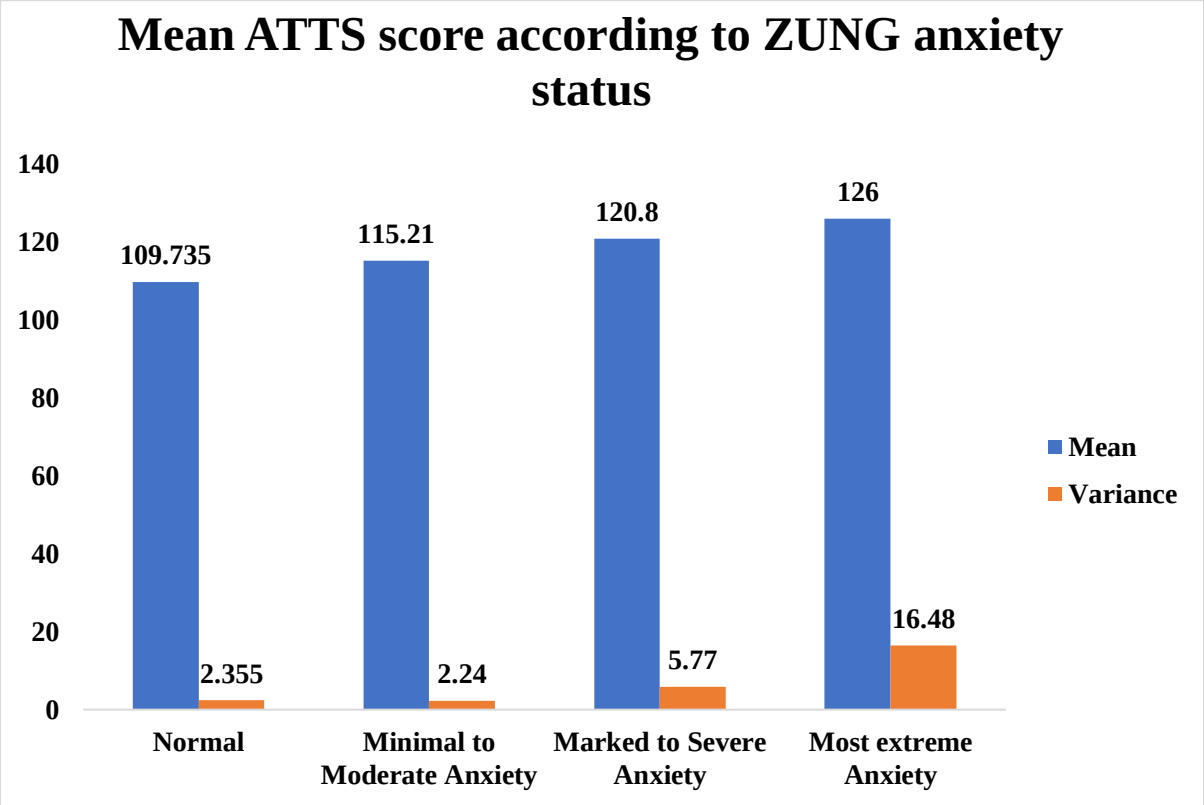
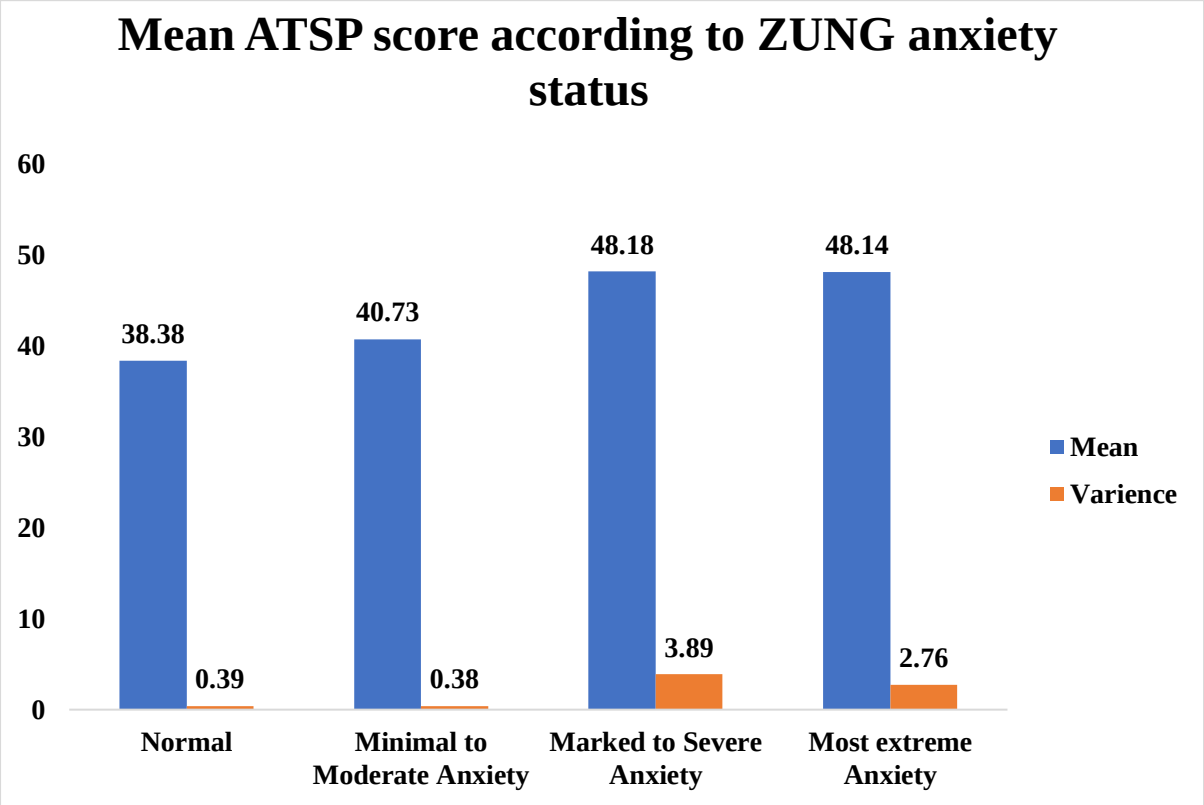


Table 46: Mean ATSP score according to ZUNG anxiety status

ZUNG Anxiety	ATSP		
	Mean	Variance	ANOVA
Normal	38.38	0.39	F value: 16.535
Minimal to Moderate Anxiety	40.73	0.38	
Marked to Severe Anxiety	48.18	3.89	p value: <0.05*
Most extreme Anxiety	48.14	2.76	



DISCUSSION

DISCUSSION:

Our study "Attitude of medical students towards Suicide & its prevention" aimed to determine the attitude of medical students towards suicide and suicide prevention. It also aimed to find the association between these attitudes and selected demographic variables. This study was conducted among students at Santosh Medical College and Hospital in Ghaziabad over a period of 2 years.

The sample size for the study is 255 medical students (minimum sample size-188), of whom 216 (80.83%) belonged to the <25 years age group. In the sample, 50 % of students were female & 50% were males, majorly (89.02%) from urban areas. Among the participants, 97.25 % were unmarried, mostly from the upper class (54.12%) & middle class (43.92%). The majority of the students were Hindu (89.41%) followed by Muslims (7.45%) and Sikhs (1.18%).

Participants in the study were medical students from all professional years of medical college- 1st year (n=71, 27.84%), 2nd year (n=39, 15.29%), 3rd year (n=36, 14.12%) & 4th-year m.b.b.s. students (n=34, 13.33%). Interns (n=52, 20.39%) and post-graduates (n=23, 9.02%) were also taken in this study.

The present study compared differences related to attitudes toward suicide and suicide prevention among medical students of tertiary care hospital in an urban community, it also highlighted their perceptions regarding the complex nature of suicide. These differences in attitudes regarding suicide, the preventability of suicide, and permissiveness towards suicide were based on various demographic variables such as age, gender, religion, socio-economic status, professional year, marital status, and past personal & family psychiatric histories. The results of this study demonstrated significant differences in attitudes based on these demographic factors.

The attitude of medical students toward suicide was calculated using the Attitudes towards Suicide questionnaire (ATTS). The attitudes were seen to be positive in all six student groupings as reported mean total scores were less than the midpoint for the scale (which would indicate lesser negative attitudes). Post-graduates reported lesser negative attitudes (Mean=108.348) as compared to under-graduates (Mean>111) and interns (Mean=118.788) & p-value ($p<0.05$) was seen to be statistically significant for the level of education variable.

In our study, Hindu (Mean=115.05) students showed more negative attitudes as compared to Muslim students (Mean=110.68) & Christian students (Mean=114) but the results were not

found to be statistically significant (p>0.05). However, a study by Poreddi et al.[3] revealed more negative attitudes toward suicide among Muslims.

According to gender, slight differences were observed with females showing better attitudes as compared to males. However, gender was not found to be statistically significant (p>0.05). This was similar to the study by B. Runeson et al.[47] who also found slight differences according to gender. Our results were also in line with the study by Poreddi et al[1]. which showed women were less permissive towards suicide.

Age was seen as a statistically significant (p<0.05) variable determining attitudes towards suicide as students with age >25 years showed better attitudes (Mean=109.85) as compared to students with age <25 years (Mean=115.43). The students who were married reported much better attitudes toward suicide (Mean=100.0) as compared to unmarried students (Mean=115.0) & marital status was also found to be a statistically significant factor (p<0.05).

Socio-economic status was not found to be a determining factor for attitude toward suicide as it was not statistically significant(p>0.05), though students from the middle class showed better attitudes (Mean=112.46).

In our study, medical students with a personal history of suicidal ideation/intent/ attempt (p>0.05) showed better attitudes toward suicide than those with no history. This was seen in contrast to a study by B. Runeson et al.[47] which found that students with a history of suicidal thoughts tended to have a more permissive attitude.

In our study, students with Depression showed a worsening attitude (increasing score) toward suicide as the severity of the condition increased. Least score was found in students without depression (Mean=112.77), gradually increasing in students with Mild Depression (Mean=115.10), Moderate Depression (Mean=125.73), and Severe Depression (Mean=129.67). This was seen in contrast to the study by Feldman et al. (2007)[48], who found the experience of depression among physicians led to less negative attitudes toward suicide.

The findings of ATTS scores were also similar for students with a history of anxiety disorder as students without anxiety showed the best attitude (Mean=109.735). The attitude towards suicide gradually worsened with increasing severity of anxiety; from students with Minimal to moderate Anxiety (Mean=115.21), to students having Severe anxiety (Mean=120.80), and to students having extreme anxiety (Mean=126.0).

Our findings were different from the study by B. Runeson et al.[47] who found Depressive & Anxiety symptoms do not affect the attitudes of students toward suicide.

The attitude of medical students toward suicide prevention was calculated using the Attitude toward suicide prevention scale (ATSP). The overall attitudes were negative, in that all six student groupings reported mean total scores higher than the midpoint for the scale (which would indicate more negative attitudes). Post-graduates reported lesser negative attitudes (Mean=36.78) as compared to under-graduates (Mean>40) and interns (Mean=42.89) & p-value ($p<0.05$) was seen to be statistically significant for the level of education variable.

In our study females reported slightly better attitudes toward suicide prevention than males but the difference was not statistically significant ($p>0.05$). This was similar to the study by Brunero et al. (2008) who reported no difference in the total score of the ATSP based on gender. However, the study by Sandford et al.[44] showed males to have more positive attitudes than females.

According to age, a better attitude was seen among students with age >25years (Mean=38.23) compared to students with age <25 years (Mean=41.31). The p-value ($p<0.05$) was found to be statistically significant. However, the study by Sandford et al. showed more negative attitudes with increasing age. In studies by Herron et al. (2001)[31] and Brunero et al.[17] (2008), no significant association between ATSP total score and age was found. Nebhinani et al.[49] (2013) also found no significant difference in attitudes between different age ranges.

Among medical students, Christian students had the most negative attitude or higher ATSP score (42±23), followed by Muslim students (41.26±2.42) and Hindu students (40.87±0.20). Sikh students showed better attitudes but the association between religion & attitudes toward suicide prevention was not found to be statistically significant ($p>0.05$). According to marital status, married students showed better attitudes toward suicide prevention (Mean=34.1) as compared to unmarried students who showed higher scores (Mean=41.0). Marital status was seen to be statistically significant ($p<0.05$).

In our study, students from lower socio-economic status showed higher scores (Mean=45.6) i.e., more negative attitudes compared to upper- (Mean=41.49) & middle-class students (Mean=39.82). These differences were statistically significant ($p<0.05$).

In a study by M.L. López-Narváez et al.[30] students with a previous personal history of suicidal ideation or attempt showed more negative attitudes in comparison to students without a

personal history of suicidal ideation or attempt. Neimeyer et al.[50] (2001) also found a negative relationship between suicide counseling skills and personal history of suicidal behaviour. However, in our study, students with a personal history of suicidal ideation/intent/attempt showed a more positive attitude (Mean=38) compared to those without (Mean=41.08); these findings were also statistically significant ($p<0.05$).

M.L. López-Narváez et al.[30] in their study also found that students without a family history of suicide behavior showed more negative attitudes compared to students with a family member with a history of suicidal behavior. The findings of our study were in line with a family history of psychiatric illness but the variable was not found to be significant statistically ($p>0.05$). Similar results were also seen in the study by S. Brunero et al.[17] & Botega et al.[51] (2005), where personal experience with suicide (family, close friends, or others) demonstrated a positive effect on attitudes.

In our study, previous experience or involvement with suicide in medical students showed no statistical difference in attitudes from students without previous involvement. This contrasted with the study by Herron et al.[31], which showed a better attitude with previous involvement in suicide.

In our study, students with Depression showed a worsening attitude (increasing score) toward suicide prevention as the severity of the condition increased. Least score was found in students without depression (Mean=40.14), to gradually increase in students with Mild Depression (Mean=40.67), to Moderate Depression (Mean=48.18), and Severe Depression (Mean=49.33).

The findings of ATSP scores were also similar for students with a history of anxiety disorder as students without anxiety showed the best attitude (Mean=38.38). The attitude towards suicide prevention gradually worsened with increasing severity of anxiety; from students having no anxiety to students having Minimal to moderate Anxiety (Mean=40.73), to students having Severe anxiety (Mean=48.18), and to students having extreme anxiety (Mean=48.14)

SUMMARY

SUMMARY AND CONCLUSION

This study was conducted in the Department of Psychiatry, Santosh Medical College and Hospital, Ghaziabad, U.P. from November 2020 to November 2022. This study was done with the aim to determine the attitudes toward suicide & suicide prevention among medical students (undergraduates, interns, and postgraduates) of Santosh Medical College and Hospital.

This study was carried out on 255 students. It was a cross-sectional study and subjects were evaluated with the Attitudes towards Suicide questionnaire (ATTS), Attitude toward suicide prevention scale (ATSP), Zung Self-Rating Depression Scale, Zung Self-Rating Anxiety Scale, and Modified Kuppuswamy Socioeconomic Scale. The data collected were tabulated and analysed.

We found that the overall attitudes towards suicide were positive for medical students, with post-graduates having the lowest scores (better attitude). The level of education was seen to be statistically significant.

It was observed in our study that students who were >25 years of age & students who were married were seen to have better attitudes toward suicide. These variables of age & marital status were found to be statistically significant.

We found no statistically significant results for variables of Gender, Religion & Socioeconomic status while measuring attitudes towards suicide of medical students.

We also observed in our study that medical students with a history of anxiety and depression showed worsening attitudes toward suicide with increasing intensity of psychiatric illness & it was seen to be statistically significant.

We found that the overall attitudes towards suicide prevention were negative for medical students, with post-graduates having the lowest scores (better attitude). The level of education was seen to be statistically significant.

It was observed in our study that students who were >25 years of age & students who were married were seen to have better attitudes toward suicide prevention. These variables of age & marital status were found to be statistically significant.

We found no statistically significant results for variables of Gender & Religion while measuring attitudes toward suicide prevention of medical students. Socioeconomic status was

seen to be a statistically significant variable for determining attitudes toward suicide prevention in our study.

We also observed in our study that medical students with a history of anxiety and depression showed worsening attitudes towards suicide prevention with increasing intensity of psychiatric illness & it was seen to be statistically significant.

FURTHER RECOMMENDATIONS

FURTHER RECOMMENDATIONS

1. This was a cross-sectional study, and as we had few faults in our study, we recommend longitudinal studies be conducted.

2. This study was conducted on medical students, so the study sample was comparatively less. We recommend conducting a study on the general population with a larger study sample.

3. To establish a cause-and-effect relationship regressional analysis is to be done.

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BIBLIOGRAPHY

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ANNEXURES:

ANNEXURE-A

DEPARTMENT OF PSYCHIATRY

SANTOSH MEDICAL COLLEGE & HOSPITAL

GHAZIABAD, U.P

SUBJECT INFORMATION SHEET

You are being requested to take part in a study entitled "Attitude of Medical students towards Suicide & its prevention".

VOLUNTARY PARTICIPATION

Your participation in this study is entirely voluntary and you are free to withdraw from this study as and when you feel so.

RISK (IF ANY)

This is a safe study. There is no risk involved per se.

CONSENT FORM

I _____ have been explained by Dr. Nitish Verma about the nature of study. I volunteer to take part in the study "Attitude of Medical students towards Suicide & its prevention" and have also explained to me the purpose of the study to my satisfaction. I hereby give my consent to be enrolled in the study.

Signature of participant:

Date:

ANNEXURE-B

Proforma for socio-demographic data

- Age:
- Sex: male/ female
- Marital status:
- Religion:
- Education:
- Socioeconomic status (Kuppuswamy scale modified for 2019):

    (a) Occupation of the Head of the Family: -

    (b)Education of the Head of the Family: -

    (c)Total Monthly Income of the Family: -

- Type of family: nuclear / joint/ extended nuclear
- Place of residence: Rural/Urban
- Family history of psychiatric illness:
- Personal history of psychiatric illness:
- Any history of suicidal ideation/intent/attempt:
- Any history of substance abuse (e.g., alcohol/tobacco/ganja/bhang/heroin /opium:
- Any experience of contact with persons at high risk for suicide/self-harm:

ANNEXURE-C

Attitudes towards Suicide Scale(ATTS)-

Statement 1 = strongly disagree 2 = disagree 3 = uncertain 4 = agree 5 = strongly agree

Statements	Strongly disagree	disagree	Uncertain	Agree	Strongly agree
It is always possible to help a person having suicidal thought					
Suicide can never be justified					
Committing suicide is among the worst thing to do to one's relatives					
Most suicide attempts are impulsive actions					
Suicide is an acceptable means to terminate an incurable disease					

Once a person has made up his/her mind about committing suicide no one can stop him/her					
Many suicide attempts are made because of revenge or to punish someone else					
People who commit suicide are usually mentally ill					
It is a human duty to try to stop someone from committing suicide					

When a person commits suicide, it is something that he/she has considered for a long time					
There is a risk of evoking suicidal thoughts in a person's mind if you ask about it					
People who make suicidal threats seldom complete suicide					
Suicide is a subject that one should rather not talk about					
Loneliness could for me be a reason to take my life					
Almost everyone has at one time or another thought about suicide					

There may be situations where the only reasonable resolution is suicide					
I could say that I would take my life without actually meaning to do so					
Suicide can sometimes be a relief for those involved					
Suicides among young people are particularly puzzling since they have everything to live for					
I would consider the possibility of taking my life if I were to suffer from a severe, incurable, disease					

A person once they have suicidal thoughts will never let them go					
Suicide happens without warning					
Most people avoid talking about suicide					
If someone wants to commit suicide, it is his or her business and we should not interfere					
It is mainly loneliness that drives people to suicide					
A suicide attempt is essentially a cry for help					
On the whole, I do not understand how people can take their lives					

Usually, relatives have no idea about what is going on when a person is thinking of suicide					
A person suffering from a severe, incurable, disease expressing wishes to die should get help to do so					
I am prepared to help a person in a suicidal crisis by making contact					
Anybody can commit suicide					
I can understand that people suffering from a severe, incurable, disease commit suicide					
People who talk about suicide do not commit suicide					

People do have the right to take their own lives					
Most suicide attempts are caused by conflicts with a close person					
I would like to get help to commit suicide if I were to suffer from a severe, incurable disease					
Suicide can be prevented					

ANNEXURE-D

Attitude toward suicide prevention Scale(ATSP):

Attitude toward suicide prevention scale is a 14-item, self-rated, 5-points Likert scale.

Statement 1 = strongly disagree 2 = disagree 3 = uncertain 4 = agree 5 = strongly agree

Statements	Strongly disagree	disagree	Uncertain	Agree	Strongly agree
I resent being asked to do more about suicide					
Suicide prevention is not my responsibility					
Making more funds available to the appropriate health services would make no difference to the suicide rate					
Working with suicidal patients is rewarding					

If people are serious about committing suicide they do not tell anyone					
I feel defensive when people offer advice about suicide prevention					
It is easy for people to be not involved in clinical practice to make judgments about suicide prevention					
If a person survives a suicide attempt, this was a play for attention					
People have a right to take their own lives					

Since unemployment & poverty are the main causes of suicide, there is little that an individual can do to prevent it					
I do not feel comfortable assessing someone for suicide risk					
Suicide prevention measures are a drain on resources, which would be more useful elsewhere					
There is no way of knowing who is going to commit suicide					

ANNEXURE-E

Zung Self-Rating Depression Scale (SDS)

For each item below, please place a check mark (□) in the column which best describes how often you felt or behaved this way during the past several days.

Statements	A little of the time	Some of the time	Good part of the time	Most of the time
I feel down-hearted and blue.				
Morning is when I feel the best.				
I have crying spells or feel like it.				
I have trouble sleeping at night.				

I eat as much as I used to.				
I still enjoy sex.				
I notice that I am losing weight.				
I have trouble with constipation.				
My heart beats faster than usual.				
I get tired for no reason.				
My mind is as clear as it used to be.				
I find it easy to do the things I used to.				

I am restless and can’t keep still.				
I feel hopeful about the future.				
I am more irritable than usual.				
I find it easy to make decisions.				
I feel that I am useful and needed.				
My life is pretty full.				
I feel that others would be better off if I were dead				
I still enjoy the things I used to do.				

ANNEXURE-F

The Self Rating Anxiety Scale of Zung

For each item below, please place a check mark (□) in the column which best describes how often you felt or behaved this way during the past several days.

Statements	A little of the time	Some of the time	Good part of the time	Most of the time
I feel more nervous and anxious than usual.				
I feel afraid for no reason at all.				
I get upset easily or feel panicky.				
I feel like I'm falling apart and going to pieces.				

I feel that everything is all right and nothing bad will happen.				
My arms and legs shake and tremble.				
I am bothered by headaches, neck and back pains.				
I feel weak and get tired easily.				
I feel calm and can sit still easily.				
I can feel my heart beating fast.				
I am bothered by dizzy spells.				

I have fainting spells or feel faint.				
I can breathe in and out easily.				
I get feelings of numbness and tingling in my fingers and toes.				
I am bothered by stomach-aches or indigestion.				
I have to empty my bladder often.				
My hands are usually dry and warm.				
My face gets hot and blushes.				

I fall asleep easily and get a good night's rest.				
I have nightmares.				

ANNEXURE-G

Modified Kuppuswamy Socioeconomic scale updated for January 2020.

(a) Occupation of the Head of the Family: -

Sr. No.	Occupation of the Head	Score
1	Legislators, Senior Officials & Managers	10
2	Professionals	9
3	Technicians and Associate Professionals	8
4	Clerks	7
5	Skilled Workers and Shop & Market Sales	6
6	Skilled Agricultural & Fishery Workers	5
7	Craft & Related Trade Workers	4
8	Plant & Machine Operators and Assemblers	3
9	Elementary Occupation	2
10	Unemployed	1

Sr. No.	b) Education of the Head of the family	Score
1	Profession or Honors	7
2	Graduate	6
3	Intermediate or diploma	5
4	High school certificate	4
5	Middle school certificate	3
6	Primary school certificate	2
7	Illiterate	1

(c)Total Monthly Income of the Family: -

Sr. No.	Updated Monthly Family Income in Rs. (2020)	Score
1	>199862	12
2	99931-199861	10
3	74756-99930	6
4	49962-74755	4
5	29973-49961	3
6	10002-29972	2
7	≤10001	1

(d)Kuppuswamy's Socio-Economic Status Scale 2020: -

Sr. No.	Score	Socioeconomic Class
1	26-29	Upper (I)
2	16-25	Upper Middle (II)
3	11-15	Lower Middle (III)
4	5-10	Upper Lower (IV)
5	< 5	Lower (V)